



Fort Hunt Park Site Development Plan

George Washington Memorial Parkway



ENVIRONMENTAL ASSESSMENT AND ASSESSMENT OF EFFECT



September 5, 2011



ENVIRONMENTAL ASSESSMENT / ASSESSMENT OF EFFECT

FORT HUNT PARK SITE DEVELOPMENT PLAN

SEPTEMBER 5, 2011

GEORGE WASHINGTON MEMORIAL PARKWAY
Fairfax County, Virginia

United States Department of the Interior · National Park Service

PROJECT SUMMARY

INTRODUCTION

The National Park Service (NPS) is developing a Site Development Plan (SDP) for Fort Hunt Park, administered by George Washington Memorial Parkway (GWMP) in Fairfax County, Virginia. This Environmental Assessment / Assessment of Effect (EA/AoE) analyzes the potential impacts of four alternatives, including a No Action Alternative, on the natural, cultural, and human environment in accordance with the National Environmental Policy Act (NEPA) of 1969, the regulations of the Council on Environmental Quality (CEQ) for implementing the Act (40 Code of Federal Regulations 1500-1508), the NPS Director's Order-12 (DO-12) (*Conservation Planning, Environmental Impact Analysis, and Decision-making*) (NPS 2001). The NPS is also using this EA/AoE for Section 106 compliance with the National Historic Preservation Act (NHPA) of 1966, as amended.

PURPOSE OF AND NEED FOR THE ACTION

The purpose of the SDP is to identify an overall direction for park management by clearly defining specific resource conditions and the desired visitor experience in order to improve the balance of recreational use of the park with resource protection objectives.

One reason the SDP is needed is because peak visitation periods exceed the park's carrying capacity, which creates a need to balance the different types of visitor use (recreation, permitted picnicking, and interpretation) with resource protection. Fort Hunt Park has seen increased visitation in the last five years. Fort Hunt Park sees the majority of visitors in the spring and summer months, when the picnic areas throughout the park are available for reservation. Use of the picnicking facilities often overwhelms the park infrastructure, including restrooms and parking, which may deter those wishing to utilize the park for other uses. This intensity of recreational use also puts park resources, particularly cultural resources, at risk to impacts and disturbance. Actions to reduce permitted picnic areas as well as the realignment of vehicular circulation are in line with reducing these risks.

Recent discoveries have increased knowledge regarding the site's rich history and have created expanded opportunities and increased demand by the public for additional interpretation. During World War II (WWII), Fort Hunt was utilized as a top secret intelligence operation for the interrogation of German prisoners of war (POWs) (NPS, n.d.b). The records for this operation were recently declassified and a great deal of new information regarding the site's history has come to light.

The SDP is also needed because changes in current park uses and expanded interpretation opportunities have created a need for changes to existing facilities and/or the addition of new facilities. The expansion of interpretation at Fort Hunt Park may require changes in circulation, the addition of a visitor facility, and upgrades/additional restroom facilities.

ALTERNATIVES

This EA/AoE analyzes the No Action Alternative along with three Action Alternatives for the SDP for Fort Hunt Park. Each of the Action Alternatives includes plans for realigning the park entrance and vehicular circulation throughout the park, the construction of interpretive facilities, a reduction in permitted picnicking and recreation facilities, and the preservation of historic structures on site.

Alternative A - No Action Alternative – Under the No Action Alternative, the NPS would continue to maintain and manage Fort Hunt Park as it does today. There would be no realignment of vehicular circulation throughout the park. Permitted picnicking and recreation facilities would continue to dominate the parks uses.

Alternative B– Alternative B would realign the park entrance road and provide two-way traffic from the park entrance to Parking Area B. Traffic from Parking Area B would travel one-way throughout the remainder of the loop and the lower road that has been closed would be open to traffic. The loop road between Picnic Areas D and E would be removed along with the parking areas at these locations. A visitor facility would be constructed at the site of the existing Picnic Pavilion B and an interpretive trail would extend from the visitor facility throughout the park. Picnic Pavilions/Areas B, C, D, and E would be removed under Alternative B along with the restroom facility located in the vicinity of Picnic Area E. Ball fields adjacent to Picnic Pavilions B and D would be removed. The ball field adjacent to Picnic Pavilion A would be improved. The north section of the loop road would be widened to accommodate a pedestrian/bicycle lane; the southern portion of the loop road would be redesigned for non-motorized/pedestrian/bicycle use.

Alternative C (Preferred Alternative)– Alternative C would realign the park entrance road and provide two-way traffic from the park entrance to Parking Area C, where vehicular use of the roadway would terminate with a turn-around. The loop road between Picnic Areas D and E would be removed along with the parking areas at these locations. A visitor facility would be constructed at the site of the existing Picnic Pavilion/Area C and an interpretive trail would extend from the visitor facility throughout the park. Picnic Pavilions/Areas B, C, D, and E would be removed under Alternative C along with the restroom facility located in the vicinity of Picnic Area E. The ball field adjacent to Picnic Pavilion D would be removed. The ball field adjacent to Picnic Pavilion A would be improved. A new pedestrian/bicycle trail would parallel the north section of the loop road; the southern portion of the loop road would be narrowed by approximately 50 percent (10 to 12 feet) for non-motorized/pedestrian/bicycle use.

Alternative D –Alternative D would realign the park entrance road and provide two-way traffic from the park entrance to Parking Area B. The roadway would then continue as a one-way facility along a new alignment which would form a smaller loop. The loop road between Picnic Areas D and E would be removed along with the parking areas at these locations. A visitor facility would be constructed at the site of the existing Picnic Pavilion B and an interpretive trail would extend from the visitor facility throughout the park. Picnic Pavilions/Areas A, B, D, and E would be removed under Alternative D. Ball fields adjacent to Picnic Pavilions B and D would be removed. A new pedestrian/bicycle trail would parallel the north section of the loop road; the southern portion of the loop road would be narrowed by approximately 50 percent to accommodate non-motorized/pedestrian/bicycle use.

SUMMARY OF IMPACTS

Impacts of the proposed alternatives were assessed in accordance with NEPA and DO-12, which required impacts to park resources to be analyzed in terms of their context, duration, and intensity; and the NHPA. Several impact topics were dismissed from further analysis because the proposed action alternative would result in negligible to minor impacts to those resources. No major impacts are anticipated as a result of this project.

In addition, the NPS set out to use the process and documentation required for the preparation of this EA/AoE to comply with Section 106 of the NHPA. The NPS was able to consult with parties with an interest in historic preservation such as the ACHP, the Virginia SHPO, the Virginia Council on Indians, Fairfax County Park

Authority, and other interested parties. In consultation with the Virginia SHPO, NPS determined that due to the general nature of the SDP and the relative uncertainty of the nature of federal undertakings which may stem from it, the NPS cannot yet assess the potential effects of these undertakings on historic properties. The SDP is part of “nondestructive project planning” for these prospective undertakings, and as such, does not “restrict the subsequent consideration of alternatives to avoid, minimize or mitigate an undertaking’s adverse effects on historic properties”. Accordingly, the NPS finds that no historic properties will be affected by the development of this SDP in accordance with 36 CFR 800.4(d)(1). The NPS commits in this document to complete the Section 106 review for each undertaking that may stem from the SDP.

NOTE TO REVIEWERS AND RESPONDENTS

We value and welcome your input on this project. The public comment period closes on October 6, 2011. The preferred system for receiving public comments electronically is through the NPS Planning, Environment, and Public Comment (PEPC) website, where the EA/AoE is publicly posted on the Internet. The PEPC database is a tool used by the NPS to manage official correspondence and analyze public comment in the planning process. The website address is <http://parkplanning.nps.gov/gwmp>. You may complete a comment form online. From the list of projects, click on the Fort Hunt Site Development Plan EA/AoE. In the left menu, click Document List, then Environmental Assessment, and Comment on Document.

You can also mail comments to:
Superintendent
George Washington Memorial Parkway
Turkey Run Park
McLean, VA 22101

Our practice is to make comments, including names and home addresses of respondents, available for public review. Individual respondents may request that we withhold their home address from the record, which we would honor to the extent allowable by law. There may also be circumstances in which we would withhold from the record a respondent's identity, as allowable by law. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment. If you include personal information (including email), we may use it to provide further project updates during the planning process. Thank you for your interest in Fort Hunt Park and your input in this project.

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CHAPTER 1: PURPOSE AND NEED

INTRODUCTION

The National Park Service (NPS) is developing a Site Development Plan (SDP) for Fort Hunt Park, a 105-acre area administered by the George Washington Memorial Parkway (GWMP)¹ in Fairfax County, Virginia. This Environmental Assessment / Assessment of Effect (EA/AoE) analyzes the potential impacts of four alternatives, including a No Action Alternative, on the natural, cultural, and human environment in accordance with the National Environmental Policy Act (NEPA) of 1969, the regulations of the Council on Environmental Quality for implementing the Act (40 Code of Federal Regulations 1500-1508), the NPS Director's Order (DO) 12 (Conservation Planning, Environmental Impact Analysis, and Decision-making) (NPS 2001). The NPS is also using this EA/AoE for Section 106 compliance with the National Historic Preservation Act (NHPA) of 1966, as amended. NPS in consultation with the Virginia Department of Historic Resources (VDHR) determined that due to the general nature of the SDP and relative uncertainty of the location and size of construction associated with the implementation of the plan that NPS will comply with NHPA by providing in this document: 1) a general determination of the Area of Potential Effect (APE); and (2) identifying known cultural resources present in the APE either listed in or eligible to be listed in the National Register Historic Place (NRHP) (i.e., historic properties). NPS has also provided guidelines in this document (see Chapter 2, Mitigation Measures of the Action Alternatives), such as adhering to the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) (Weeks and Grimmer 1995) that should prevent adverse effects to historic properties from occurring. As a result, NPS will make a finding on the development of the SDP in this document and present a Section 106 strategy for its implementation in Chapter 5.

The Fort Hunt Park SDP will guide NPS in decisions regarding the management of park resources and visitor use and experiences. The park includes picnic areas, pavilions, trails, ball fields, a playground, a maintenance yard, a park police station and paddocks, as well as several historic structures including four gun batteries, a Battery Commander's Station, and a Non-Commissioned Officer's (NCO) Quarters from the Spanish-American War era. The SDP may include plans for changes to existing facilities as well as the addition of new facilities. The Action Alternatives include a new visitor facility; changes to park circulation including interpretive trails, roads, and parking; and changes to visitor amenities including picnic facilities and pavilions, restrooms, ball fields, etc.

In addition to determining the environmental consequences of the proposed action and the No Action Alternative, the NPS Management Policies (2006) and DO-12 require analysis of potential effects to determine whether actions would impair the park's resources. A draft determination of impairment for the NPS preferred alternative is contained in Appendix A. The Coastal Zone Management Act of 1972 (CZMA) requires an examination of impacts on coastal zone management and the balance of economic development with environmental conservation measures in a designated coastal zone. The CZMA Consistency Determination is included as Appendix C of this EA/AoE.

1. In this EA/AoE, George Washington Memorial Parkway or GWMP refers to the administrative unit of the NPS, whereas "the Parkway" or the George Washington Memorial Parkway refers to the actual roadway extending from Mount Vernon to the Capital Beltway.

PURPOSE OF AND NEED FOR ACTION

The purpose of the SDP is to identify an overall direction for park management by clearly defining specific resource conditions and the desired visitor experience.

The SDP is needed because peak visitation periods exceed the park's carrying capacity, creating an imbalance between the different types of visitor use (recreation, permitted picnicking, and interpretation) and resource protection. Fort Hunt Park has seen increased visitation in the last five years. The park sees the majority of visitors in the spring and summer months, when the picnic areas throughout the park are available by reservation. Use of the picnicking facilities often overwhelms the park infrastructure, including restrooms and parking facilities, which may deter those wishing to utilize the park for other uses. This intensity of recreational use also puts park resources, particularly cultural resources, at risk to impacts and disturbance. Actions to reduce permitted picnic areas as well as the realignment of vehicular circulation are in line with reducing these risks.

The recent discoveries regarding the site's rich history during World War II (WWII) have expanded opportunities and increased demand by the public for additional interpretation. During WWII, Fort Hunt was utilized as a top secret intelligence operation for the interrogation of Axis prisoners of war (POWs) (NPS, n.d.b). The records for this operation were recently declassified, and a great deal of new information regarding the site's history has come to light.

The SDP is also needed because changes in current park uses (increase in park visitation and permitted picnicking) and expanded interpretation have created a need for changes to existing facilities and/or the addition of new facilities. The expansion of interpretation at Fort Hunt Park will require changes in circulation, the addition of a visitor facility, and upgraded/additional restroom facilities.

PROJECT OBJECTIVES

Objectives are "what must be achieved to a large degree for the action to be considered a success" (NPS DO-12) and represent more specific statements of purpose and need. All alternatives selected for detailed analysis must meet all objectives to a large degree and must resolve the purpose of and need for the action. The following objectives were identified by the planning team for this project:

- Protect the cultural and natural resources.
- Enhance the visitor experience and manage visitor use.
- Determine infrastructure and facilities needs.

The SDP analysis provides the basis for future site development at Fort Hunt Park. The SDP involves environmental effects over a broad time horizon and the detail of the impact analysis is fairly general in nature because individual project plans are not fully developed. The Fort Hunt SDP EA/AoE does not eliminate the need for future site-specific environmental review for individual development proposals that are described in the SDP. The determination of the necessary level of additional NEPA analysis however, would be made on a case-by-case basis at the time a site specific project is established.

PROJECT AREA

Fort Hunt Park is located in Fairfax County, Virginia on the George Washington Memorial Parkway approximately 11.5 miles south of Washington, DC, 6 miles south of Old Town Alexandria, and 2.5 miles east of Mount Vernon Estate. Fort Hunt Park is a 105-acre park under the jurisdiction of the NPS. It is bounded by the Potomac River to the south and east and residential areas of Fort Hunt to the north and west (Figure 1). The park entrance is accessible via an exit ramp from the northbound and southbound lanes of the George Washington Memorial Parkway (the Parkway). The ramp forks into two directions; one leading to the entrance of Fort Hunt Park, the other continuing along Fort Hunt Road, a neighborhood roadway that runs along the north boundary of the park.

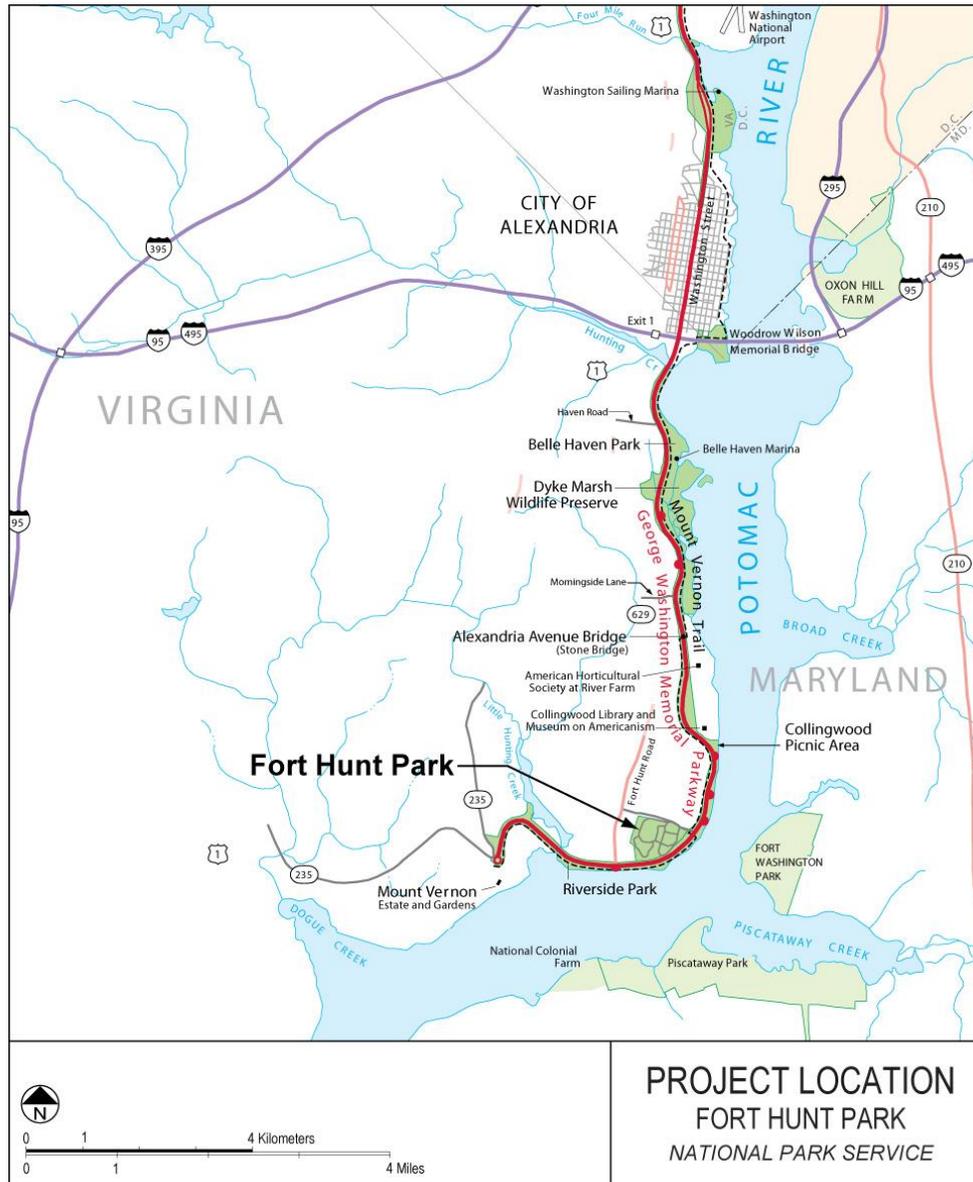


Figure 1. Project Location

Fort Hunt Park currently provides a range of different recreational opportunities that include bicycling, volleyball, softball, jogging, picnicking and bird watching. Existing facilities at the park include five picnic areas, four pavilions, a loop road, nature trails, baseball fields, a playground, two volleyball courts, a maintenance yard, restrooms, and a park police station and paddocks. In addition, the property contains several historic structures including four gun batteries, a Battery Commander’s Station, and the NCO Quarters from the Spanish-American War era (Figure 2).

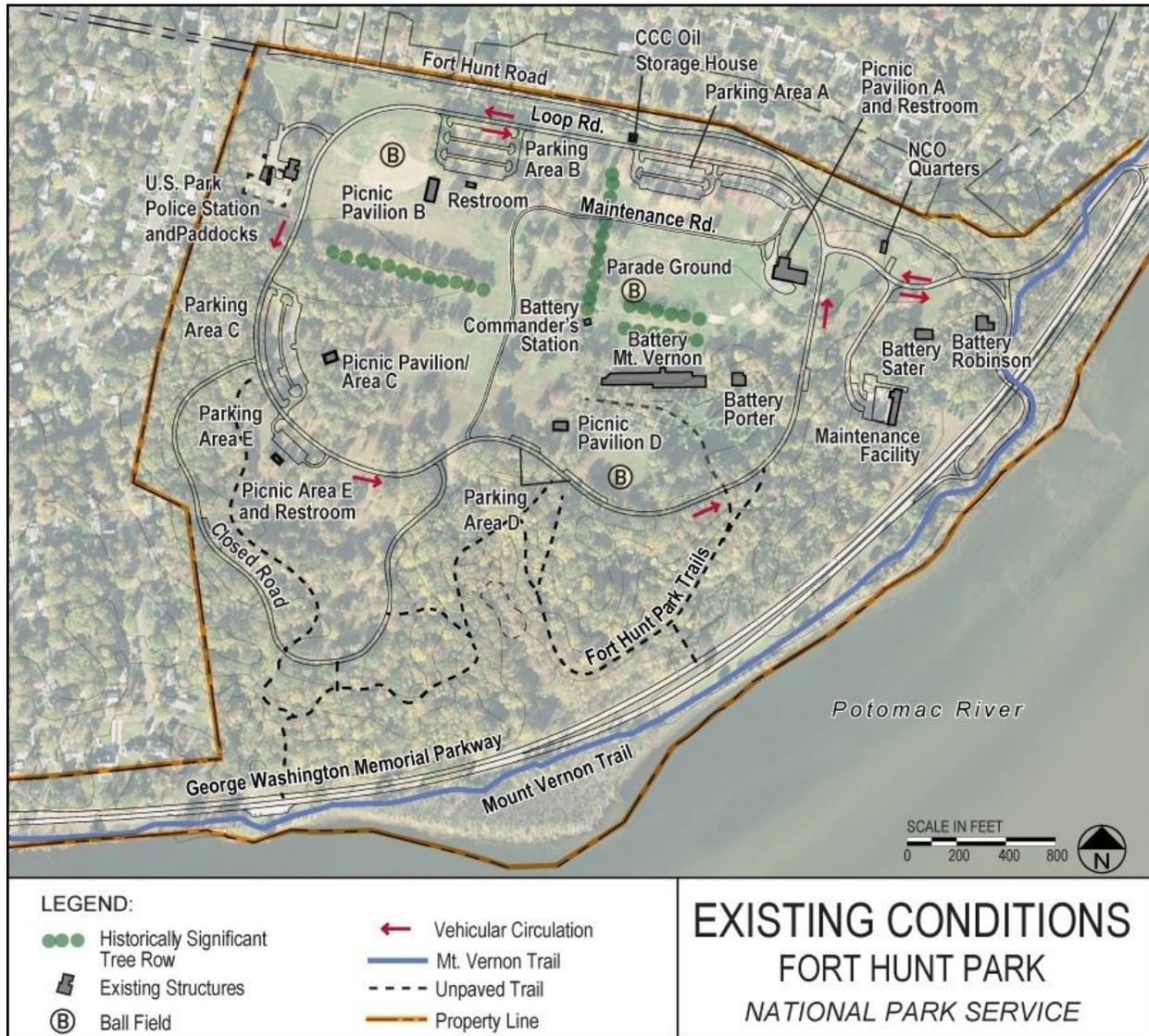


Figure 2. Existing Conditions

PROJECT BACKGROUND

Today, Fort Hunt Park is a 105-acre area of GWMP, which is administered by the NPS. Fort Hunt has a diverse history due, in part, to its proximity to Washington, DC. Fort Hunt has been the scene of a constantly shifting panorama of people and activities, which mirror the major social and political trends of the first half of the 20th century. The site’s rich history includes a portion of the site once being occupied by George

Washington's River Farm and the site serving as a coastal artillery battery to defend the Nation's Capital. The recent declassification of the site's role in WWII secret military operations has resulted in increased interest in the history of Fort Hunt Park from the public and from Congress. These discoveries have led the NPS to evaluate Fort Hunt Park's current visitor use and develop this SDP to balance the interpretation of the park's historic usage with current recreational uses, and to guide future development at the park. To guide the SDP development, the NPS conducted a planning charette and value analysis workshop in 2011. The results of the workshop and public and agency scoping were used to develop alternatives for inclusion in this EA/AoE.

SIGNIFICANCE OF FORT HUNT PARK

The history of the site upon which Fort Hunt Park sits is detailed in Chapter 3 of this EA/AoE. The Director of Public Buildings and Public Parks of the National Capital assumed jurisdiction from the War Department in 1932 (Mackintosh, pg. 138). From July 1942 to November 1946, the War Department repossessed the site. On June 30, 1948, Fort Hunt was acquired by the Department of the Interior (DOI).

Fort Hunt was listed in the National Register of Historic Places (NRHP) in March 1980, although the nomination included only thirteen acres of its total land, covering the extent of the remaining historic structures; the four gun batteries; the Battery Commander's Station; a single dwelling (the NCO's Quarters); and a stable (NPS 2004). Fort Hunt was listed in the NRHP under criterion A, for its association with events that have made a significant contribution to the broad patterns of our history. There are two periods of significance associated with the 1980 listing: 1882 through 1924 and 1933 through 1943.

SIGNIFICANCE OF GEORGE WASHINGTON MEMORIAL PARKWAY

The Parkway was developed as a scenic parkway to help preserve the Potomac River Gorge and shoreline while serving as a memorial to the first president of the United States, George Washington. The first section, called the Mount Vernon Memorial Highway, authorized by legislation signed by President Calvin Coolidge on May 23, 1928, was completed in 1932 to commemorate the bicentennial of George Washington's birth on February 22, 1932. As the Mount Vernon Memorial Highway was being completed, President Herbert Hoover signed what became known as the Capper-Cramton Act on May 29, 1930. This Act authorized appropriations for the GWMP, which was "to include the shores of the Potomac, and adjacent lands, from Mount Vernon to a point above the Great Falls on the Virginia side including the protection and preservation of the natural scenery of the Gorge and the Great Falls of the Potomac, the preservation of the historic Patowmack Canal, and the acquisition of that portion of the Chesapeake and Ohio Canal below Point of Rocks" (Public Law 71-284, as found in Mackintosh, 1996). The Capper-Cramton Act included the Mount Vernon Memorial Highway as a part of the GWMP and proposed the protection of the northern and southern shores of the Potomac. The GWMP was designated a National Park Unit in 1933.

Today, the Parkway extends from the Capital Beltway, to the north, to Mount Vernon, Virginia, to the south. GWMP administers the Parkway and a number of park sites and memorials along the Potomac River that provide a variety of recreational and educational experiences to more than 9 million people annually. The original section of the Parkway, the Mount Vernon Memorial Highway, was listed in the NRHP in 1981 under criterion B for its commemoration of George Washington and under criterion C for landscape architecture (NPS 1981). The boundaries of the Mount Vernon Memorial Highway, as included on the NRHP, includes Fort Hunt Park as a recreational area along the George Washington Memorial Parkway used to fulfill the Parkway's role as a recreational destination.

APPLICABLE FEDERAL LAWS AND REGULATIONS

The following are laws, regulations, and management plans applicable to the proposed action that govern the federal agencies involved in this NEPA analysis.

NATIONAL ENVIRONMENTAL POLICY ACT, 1969, AS AMENDED

NEPA section 102(2)(c) requires that an environmental impact statement be prepared for proposed major federal actions that may significantly affect the quality of the human environment. NEPA was passed by Congress in 1969 and took effect on January 1, 1970. This legislation established this country's environmental policies, including the goal of achieving productive harmony between human beings and the physical environment for present and future generations. It provided the tools to implement these goals by requiring that every federal agency prepare an in-depth study of the impacts of "major federal actions having a significant effect on the environment" and alternatives to those actions. It also required that each agency make that information a part of its decisions. NEPA also requires that agencies make a diligent effort to involve the interested members of the public before they make decisions affecting the environment.

NEPA is implemented through regulations of the Council on Environmental Quality (CEQ), effective 1978 (40 CFR 1500 – 1508). The NPS has in turn adopted procedures to comply with the act and the CEQ regulations, as found in DO-12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* (NPS 2001), and its accompanying handbook.

NPS ORGANIC ACT OF 1916

By enacting the Organic Act, Congress directed the U.S. Department of the Interior and the NPS to manage units "to conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such a manner and by such a means as will leave them unimpaired for the enjoyment of future generations" (16 USC 1). Despite these congressional mandates, the Organic Act and its amendments afford the NPS latitude when making resource decisions. Because conservation remains predominant, the NPS seeks to avoid or to minimize adverse impacts on park resources and values. However, the Organic Act does give the Secretary of the Interior discretion to provide "for the destruction of such animal and of such plant life as may be detrimental to the use of any of said parks, monuments, or reservations" (16 USC 3).

REDWOOD NATIONAL PARK EXPANSION ACT OF 1978, AS AMENDED

All NPS units are to be managed and protected as parks, whether established as a recreation area, historic site, or any other designation. This act states that the NPS must conduct its actions in a manner to ensure no "derogation of the values and purposes for which these various areas have been established, except as may have been or shall be directly and specifically provided by Congress." (PL 95-250, USC Sec 1a-1).

NATIONAL PARKS OMNIBUS MANAGEMENT ACT OF 1998

National Parks Omnibus Management Act of 1998 (16 USC 5901 et seq.) directs the NPS to obtain scientific and technical information for analysis. The NPS handbook for DO-12 states that if, "such information cannot be obtained due to excessive cost or technical impossibility, the proposed alternative for decision will be modified to eliminate the action causing the unknown or uncertain impact or other alternatives will be selected" (Section 4.4).

AMERICANS WITH DISABILITIES AND ARCHITECTURAL BARRIERS ACT GUIDELINES

Pursuant to the Americans with Disabilities Act of 1990 (ADA) and the Architectural Barriers Act of 1968 (ABA), all public buildings, structures, and facilities must comply with specific requirements related to architectural standards, policies, practices, and procedures that accommodate people with hearing, vision, or other disability; and other access requirements. Public facilities and places must remove barriers in existing buildings and landscapes, as necessary and where appropriate. The NPS must comply with the Architectural Barriers Act Accessibility Standard (ABAAS) as well as ADA standards for this project.

ENDANGERED SPECIES ACT OF 1973 (16 U.S.C. 1531-1544, 87 STAT. 884), AS AMENDED

This act requires all federal agencies to consult with the Secretary of the Interior on all projects and proposals having potential impact on federally endangered and threatened plants and animals. NPS policy also requires examination of the impacts on federal candidate species, as well as state-listed threatened, endangered candidate, rare, declining, and sensitive species. Section 7 of the Endangered Species Act requires federal agencies, through consultation with U.S. Fish and Wildlife Service (USFWS), to insure that any action authorized, funded or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat.

BALD AND GOLDEN EAGLE PROTECTION ACT

This act, passed in 1940 and amended in 1972, provides for the protection of the bald eagle and the golden eagle (USFWS 2010b). The act prohibits the take; possession; sale; purchase; barter; offer to sell, purchase, or barter; transport; export or import of any bald eagle or golden eagle part, nest, or egg unless allowed by permit. To take an eagle includes pursuit, to shoot or shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.

MIGRATORY BIRD TREATY ACT OF 1918

The Migratory Bird Treaty Act (MBTA) of 1918 implemented the 1916 convention between the United States and Great Britain for the protection of birds migrating between the U.S. and Canada. Similar conventions between the United States and Mexico (1936), Japan (1972) and the Union of Soviet Socialist Republics (1976) further expanded the scope of international protection of migratory birds. Each new treaty has been incorporated into the MBTA as an amendment and the provisions of the new treaty are implemented domestically. These four treaties and their enabling legislation, the MBTA, established federal responsibilities for the protection of nearly all species of birds and their eggs and nests.

CLEAN AIR ACT OF 1970, AS AMENDED

The Clean Air Act was enacted to regulate and reduce air pollution from area, stationary and mobile sources and to protect the nation's air resources and public health. Under the Clean Air Act, the U.S. Environmental Protection Agency (EPA) must provide health-based air quality standards against a variety of pollutants, such as ozone, carbon monoxide, particulate matter, lead, nitrogen oxides and sulfur dioxides. National parks are designated as Class I air quality areas, meaning that they are allowed the smallest incremental pollution increases above baseline concentrations.

CLEAN WATER ACT (SECTION 404). 33 U.S.C. §1251 ET SEQ. (1972)

Section 404 of the Clean Water Act (CWA) established a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry.

NATIONAL HISTORIC PRESERVATION ACT OF 1966, AS AMENDED

Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their undertakings on properties listed, or potentially eligible for listing, on the National Register of Historic Places. All actions affecting the park's cultural resources must comply with this law, which is implemented through 36 CFR 800.

ARCHEOLOGICAL RESOURCES PROTECTION ACT, 1979

The Archeological Resources Protection Act (ARPA) was enacted in order to preserve the archeological resources that are key to the history of America. Archeological resources must be protected because: they are accessible on public lands; they are commercially valuable; and existing federal laws do not adequately protect them. The ARPA describes the requirements that must be met before federal authorities can issue a permit to excavate or remove any archeological resource on federal or Indian lands; the curation requirements of artifacts, other materials excavated or removed, and the records related to the artifacts and materials; and authorizes the Secretary of the Interior to issue regulations describing in more detail the requirements regarding these collections.

COASTAL ZONE MANAGEMENT ACT (CZMA) OF 1972

The CZMA of 1972 is administered by the National Oceanic and Atmospheric Administration's (NOAA) Office of Ocean and Coastal Resource Management. The CZMA provides for management of coastal resources and "balances economic development with environmental conservation" (NOAA 2007). The National Coastal Zone Management Program is outlined in the CZMA (See Virginia Coastal Zone Management Program in Chapter 5).

EXECUTIVE ORDERS AND DIRECTOR'S ORDERS

EXECUTIVE ORDER 11593, PROTECTION AND ENHANCEMENT OF THE CULTURAL ENVIRONMENT

This Executive Order directs the NPS to support the preservation of cultural properties and to identify and nominate to the NRHP cultural properties within the park and to "exercise caution . . . to assure that any NPS-owned property that might qualify for nomination is not inadvertently transferred, sold, demolished, or substantially altered."

EXECUTIVE ORDER 11988, FLOODPLAIN MANAGEMENT

This Executive Order directs the NPS to avoid, to the extent possible, the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative. NPS complies with this Executive Order through the guidance outlined in Director's Order 77-2: Floodplain Management.

EXECUTIVE ORDER 11990, PROTECTION OF WETLANDS

This Executive Order directs the NPS to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. NPS complies with this Executive Order through the guidance outlined in Director's Order 77-1: Wetland Protection.

DIRECTOR'S ORDER 12: CONSERVATION PLANNING, ENVIRONMENTAL IMPACT ANALYSIS, AND DECISION-MAKING

DO-12 (NPS 2001) directs the way that the NPS complies with the NEPA, including all aspects of environmental analysis, public involvement and resource-based decisions. NPS must follow all sources of NEPA guidance, including but not limited to, 40 CFR 1500-1508 and 516 Department Manual. DO-12 and its technical manual outlines the responsibilities of the parties accountable for ensuring compliance with NEPA, from the director to project managers and contracting officers.

DIRECTOR'S ORDER 28: CULTURAL RESOURCE MANAGEMENT

DO-28 (NPS 1998) directs the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship in accordance with the policies and principals contained in the NPS Management Policies (2006). This Director's Order is carried out through NPS 28, Cultural Resource Management Guidelines, which provides the fundamental concepts of cultural resource management for the NPS. The cultural resource management guidelines address cultural landscapes stating "preservation practices [should be implemented] to enable long-term preservation of a resource's historic features, qualities, and materials [of a cultural landscape]" (NPS2006).

DIRECTOR'S ORDER 28A: ARCHEOLOGY

DO-28A supplements DO-28: *Cultural Resources Management Guidelines*, providing guidance to park managers and staff regarding archeological programs. This order also details archeological program requirements within NPS units and all applicable standards and guidelines (NPS 1998b).

DIRECTOR'S ORDER 77: NATURAL RESOURCES MANAGEMENT GUIDELINE (1991)

DO-77(NPS 1991) provides guidance on implementing laws and regulations relevant to natural resources to park managers for all planned and ongoing natural resource management activities. Managers must follow all federal laws, regulations, and policies. This document provides the guidance for park management to design, implement, and evaluate a comprehensive natural resource management program in accordance with relevant laws.

NPS MANAGEMENT POLICIES

The NPS Management Policies (2006) is the basic NPS-wide policy document, adherence to which is mandatory unless specifically waived or modified by the NPS director or certain departmental officials, including the Secretary of the Interior. Actions under this EA/AoE are in part guided by these management policies. Sections which are particularly relevant to this project are as follows:

SECTION 4.1.3 – EVALUATING IMPACTS ON NATURAL RESOURCES

The NPS will ensure that the environmental costs and benefits of proposed actions are fully and openly evaluated before implementing actions that may impact the natural resources of parks. The process of evaluation must include public engagement; the analysis of scientific and technical information in the planning, evaluation, and decision-making processes; the involvement of interdisciplinary teams; and the full incorporation of mitigation measures and other principles of sustainable park management (NPS 2006b).

SECTION 5.3.1 – PROTECTION AND PRESERVATION OF CULTURAL RESOURCES

The NPS will endeavor to protect cultural resources against overuse, deterioration, environmental impacts, and other threats without compromising the integrity of cultural resources (NPS 2006b).

SECTION 8.2.1 – VISITOR CARRYING CAPACITY

The NPS will identify visitor carrying capacities for managing public use and will identify ways to monitor and address unacceptable impacts on park resources and visitor experiences (NPS 2006b).

SECTION 8.2.2 – RECREATIONAL ACTIVITIES

The NPS will allow a variety of recreational uses and will monitor these visitor uses to determine their appropriateness for the specific park unit as well as the level of impairment to park resources (NPS 2006b).

SECTION 8.2.4 – ACCESSIBILITY FOR PERSONS WITH DISABILITIES

The NPS will make all reasonable efforts to make NPS facilities, programs, and services accessible to and usable by all people, including those with disabilities. The NPS will comply with the ABA of 1968, the Rehabilitation Act of 1973, and section 507 of the ADA (NPS 2006b).

PREVIOUS AND RELATED PLANNING STUDIES

Other previous and related planning studies that contributed to the development of alternatives include *Fairfax County, VA Comprehensive Plan 2011*, *Little Hunting Creek Watershed Management Plan*, *Fort Hunt Batteries Conditions and Treatment Plan*, *GWMP Long-Range Interpretive Plan*, and *Fort Hunt Park Site Development Plan Value Analysis*. The following summarizes how the project would meet the goals and objectives of these plans and policies:

FAIRFAX COUNTY COMPREHENSIVE PLAN – MOUNT VERNON AREA PLAN, FORT HUNT SECTOR

The Fairfax County Comprehensive Plan (Fairfax County, 2011a) provides recommendations for land use, transportation, housing, the environment, heritage resources, public facilities and parks and recreation for different areas of the County. Fort Hunt Park lies within the Mount Vernon Area Plan Fort Hunt Planning Sector. The Fort Hunt Park SDP is consistent with area plans goals and objective, which identified trails and open space as desired features in this area. Resource protection is consistent with the environment sections of the area plan and the SDP would have no effect on land use, transportation, housing, heritage resources or public facilities aspects of the plan.

LITTLE HUNTING CREEK WATERSHED MANAGEMENT PLAN

The Management Plan strives to improve and maintain watershed functions including water quality, habitat, and hydrology; reduce stormwater impacts to protect human health and safety; and involve stakeholders in protection, maintenance, and restoration of the watershed. The plan includes a recommendation to construct new wetlands at various points along the Parkway near the Potomac River, including an area adjacent to Fort Hunt Park, south of the Parkway, on the west side of the unnamed tributary flowing from Fort Hunt to the Potomac River (Fairfax County 2004).

FORT HUNT BATTERIES CONDITIONS ASSESSMENT AND TREATMENT PLAN

The purpose of this investigation was to assess the existing conditions and develop appropriate treatments for the stabilization of the four batteries and the battery command station at Fort Hunt Park. The primary objective of the conditions assessment is to identify any unsafe or unsecure conditions associated with these structures (NPS, 2002b).

GEORGE WASHINGTON MEMORIAL PARKWAY LONG-RANGE INTERPRETIVE PLAN

The GWMP Long-Range Interpretive Plan provides general direction for interpretation of the many NPS sites that the GWMP administers, including Fort Hunt Park. The GWMP Long-Range Interpretive Plan describes the purpose of Fort Hunt Park is to preserve and interpret the historical and natural resources and history of Fort Hunt (NPS, 2005). The Long-Range Interpretive Plan describes different interpretive themes, defines visitor experience goals, and provides program and media recommendations for Fort Hunt. The Fort Hunt section (pages 76-80) of the Long-Range Interpretive Plan is provided in Appendix D.

FORT HUNT PARK SITE DEVELOPMENT PLAN VALUE ANALYSIS

The *Fort Hunt Park Site Development Plan Value Analysis* study was conducted to compare the potential options for the SDP. The study looked at potential designs, costs, and resource constraints for a number of options and the resulting report documented the value analysis process that weighed these various options. The options that scored the highest were carried forward and developed into the full alternatives being analyzed in this EA/AoE. The value analysis also helped NPS choose a preferred alternative.

FUTURE COMPLIANCE AND PERMITS

CHESAPEAKE BAY PRESERVATION ORDINANCE

The Chesapeake Bay Preservation Ordinance regulates building in Fairfax County Resource Protection Areas (RPAs). RPAs are “corridors of environmentally sensitive land that lie alongside or near the shorelines of streams, rivers and other waterways which drain into the Potomac River and eventually into the Chesapeake Bay” (Fairfax County 2010b).

VIRGINIA WATER PROTECTION PERMIT PROGRAM

The Virginia Water Protection (VWP) Permit Program is administered by the VDEQ (Virginia Administrative Code, 2009). The VWP Permit Program requires permits for any activity involving dredging, filling, or discharging pollutants to surface waters; withdrawal of surface waters; the alteration of physical, chemical, or biological properties of surface waters that would make them detrimental to public health or to animal or aquatic life; or the use of waters for domestic or industrial consumption (VDEQ 2010b). The VWP Permit

Program also requires permits for the following actions in wetlands: activities that would significantly alter or degrade existing wetland acreage or functions, drainage of wetlands, filling or dumping, and permanent flooding and impounding. Permits require a mitigation plan that demonstrates avoidance and mitigation to the extent practicable and compensation for unavoidable impacts.

THE VIRGINIA STORMWATER ACT

The Virginia Stormwater Management Program, established under the Virginia Stormwater Act, is administered by the Virginia Department of Conservation and Recreation (VDCR) (VDCR 2010). VDCR issues permits for the control of stormwater discharges from Municipal Separate Storm Sewer Systems and construction activities.

SCOPING PROCESS AND PUBLIC PARTICIPATION

NEPA regulations require an “early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action.” To determine the scope of issues to be addressed and analyzed in depth in this EA/AoE, meetings were conducted with park staff and the public. During the scoping process, specific considerations and concerns were identified as critical in supporting the direction for park management, desired visitor experience, interpretive opportunities, and protection of park resources. Along with the purpose of and need for the proposed action and objectives, these topics guided the development of alternatives and contributed to the selection of impact topics as identified in the next section.

In addition to internal and agency scoping, public scoping for the Fort Hunt SDP EA/AoE began on January 10, 2011 and concluded on March 11, 2011. A public scoping meeting was initially scheduled for January 27, 2011; however, this meeting was cancelled due to inclement weather. The public scoping meeting was rescheduled and held on February 24, 2011, at the Martha Washington Library, 6614 Fort Hunt Road, Alexandria, Virginia. Notice of the public meetings and the rescheduled date were posted on the Planning, Environment, and Public Comment website (PEPC). In addition, the NPS sent notices of the meeting and rescheduled date to individuals and organizations, including park neighbors and WWII veterans of P.O. Box 1142, which was a secret American military intelligence facility that operated at the site where Fort Hunt Park is now located. The purpose of this meeting was to solicit public input on the purpose, need, and objectives of the project; major issues; and potential alternatives. A total of thirty-three (33) people signed in as they entered the meeting facility. The majority of individuals who signed in at the meeting were property owners with mailing addresses adjacent to Fort Hunt Park.

During the 60 day public scoping period, sixty-five (65) pieces of correspondence from 6 states were received. Individuals living within the vicinity of the project area (Virginia) submitted approximately eighty-eight (88) percent of those correspondence pieces. The majority of Virginia residents lived adjacent to or nearby Fort Hunt Park. Comments were also provided by the Fairfax County Park Authority, the National Parks Conservation Association, Friends of Dyke Marsh, and WWII veterans.

Respondents provided a number of specific considerations and concerns. These are summarized below.

Construction of a visitor facility along with improved interpretation of the park’s history was supported by the majority of respondents. Many indicated that a small to moderate-sized building requiring no additional parking would be desirable. Some provided suggestions for visitor facility locations. Of these, the majority

preferred a visitor facility located near the park entrance. Some suggested that the NCO Quarters be repurposed as a museum/visitor facility.

A number of respondents were interested in the continuation of the park's recreational activities. A small minority of respondents was opposed to the construction of a visitor facility and would prefer to see the park maintain all of the current recreational areas. Some were concerned that a visitor facility would detract from the park's recreational uses. Additional recreational opportunities were suggested to include more ball fields, improved playground equipment, and the continuation of the summer concert series.

Vehicular circulation and access were also commented upon by some respondents. Respondents overwhelmingly agreed that there should be no new entrances to the park. Many requested that the closed loop road in Area D remain closed to traffic.

Natural resources were also a concern for several respondents. Some stated that they would prefer only dead or injured trees be removed. There was some concern that actions at the park may impact the bald eagle nest. Other concerns included stormwater management and management of invasive species. In general, respondents asked that the NPS to minimize impacts to the natural environment.

Several respondents stressed the importance of preserving the park's historic structures. In addition to the visitor facility, respondents would also like to see interpretation through the use of new historical markers throughout the park. There were a few suggestions for volunteers to assist with interpretive activities, running a museum, and with planning efforts.

Regarding park maintenance and operations, it was suggested the park police station and the maintenance facility should remain in their current locations. Some expressed concern regarding vehicles exceeding the speed limit on Fort Hunt Road and within the park. There were suggestions to provide speed controls and/or more enforcement. There were also several respondents who suggested increased park security.

Along with the purpose and need for the proposed action, these considerations and concerns guided the development of alternatives and contributed to the selection of impact topics as identified in this EA/AoE.

NPS considered the public comments during the 2011 value analysis study conducted to compare the potential options for the SDP. The study looked at potential designs, costs, and resource constraints for a number of options and the resulting report documented the value analysis process that weighed these various options. The options that scored the highest were carried forward and developed into the full alternatives being analyzed in this EA/AoE. The value analysis also helped NPS choose a preferred alternative.

AGENCY CONSULTATION

Coordination with local and federal agencies and various interest groups was conducted during the NEPA process to identify issues and/or concerns related to the SDP at Fort Hunt Park. In accordance with Section 7 of the Endangered Species Act, consultation letters were sent from the NPS to the U.S. Fish and Wildlife Service (USFWS) and the VDCR (See Appendix B).

The NPS is also using this EA/AoE for Section 106 compliance. NPS in consultation with the VDHR determined that due to the general nature of the SDP and relative uncertainty of the location and size of construction associated with the implementation of the plan that NPS will comply with NHPA by providing in

this document: 1) a general determination of the APE; and 2) identifying known cultural resources present in the APE either listed in or eligible to be listed in the NRHP (i.e., historic properties). NPS has also provided guidelines in this document (see Chapter 2, Mitigation Measures of the Action Alternatives), such as adhering to the Secretary of the Interior's Standards for the Treatment of Historic Properties (36 CFR 68) (Weeks and Grimmer 1995) that should prevent adverse effects to historic properties from occurring. As a result, NPS will make a finding on the development of the SDP in this document and present a Section 106 strategy for its implementation in Chapter 5.

NPS notified the Advisory Council on Historic Preservation (ACHP), VDHR, the Virginia Council on Indians (VCOI), and others of its intent to use the NEPA process in conjunction with Section 106 during the scoping period and solicited comments on both NEPA and Section 106. Through this process, Fairfax County Park Authority was identified as a consulting party under Section 106. The ACHP, VDHR, VCOI and FCPA will all receive a copy of this EA/AoE for review and comment to fulfill the George Washington Memorial Parkways obligations under §106 (36 CFR §800.8[c])

ISSUES AND IMPACT TOPICS ANALYZED IN THIS EA/AOE

ISSUES

Issues describe problems or concerns associated with existing environmental conditions or current operations as well as problems that may arise from the implementation of any of the alternatives. The project team identified potential issues associated with the proposed improvements to the Fort Hunt Park during internal scoping and based on the feedback obtained during the public scoping process. These issues and concerns have been included with impact topics that are discussed in “Chapter 3: Affected Environment” and are analyzed in “Chapter 4: Environmental Consequences.”

Large Permitted Picnics Affect Other Visitor Uses

During peak periods of visitor use, other park activities are negatively influenced by visitors attending permitted picnic events. Large picnic events consume most of the parking and heavily utilize visitor facilities such as the restrooms. Noise and congestion during these peak periods impact other types of park uses (bicycling, jogging, nature watching) and influence the visitor experience. This intensity of recreational use also puts park resources, particularly cultural resources, at risk to impacts and disturbance. GWMP seeks to create a better balance of park uses and manage these activities to further protect park resources and to minimize impacts on other types of visitor experience.

Conflicts between Pedestrians/Bicyclists and Motorists on Loop Road

Currently, pedestrians and bicyclists share the loop road with motor vehicles and during periods of peak visitation, there can be conflicts and safety concerns. A clear separation between the roadway system and trail system is needed.

Park Visitor Use in Certain Historic Core Areas Contribute To Soil Compaction and Drainage Problems

At various locations throughout the park, particularly surrounding permitted picnic areas, park visitors have created social trails by taking shortcuts from designated roadways, parking lots, and trails to ball fields, picnic pavilions, etc. Furthermore, existing grades and stormwater management infrastructure do not adequately

manage water at some sites within the park, locations throughout the park tend to have water pooling and other drainage issues occur during storm events.

Inappropriate Visitor Uses Have Potential to Affect Archeological Sites or Other Resources

The area around Fort Hunt Park has a long history of human occupation, and consequently, archeological resources which date from pre-historic times through WWII are present throughout the park. Although localized archeological surveys have been conducted at individual sites within the park, there is high archeological potential at locations throughout the park. Currently, Fort Hunt Park lacks a complete and comprehensive delineation of archeological resources throughout the park, and further investigations are needed. Furthermore, due to soil compaction and drainage issues, some of the more shallow archeological artifacts risk exposure and potential loss including those artifacts associated with the WWII era.

Lack of Interpretive Focus of Rich History

Although Fort Hunt Park has a rich history, there is currently very little interpretive information shared with the public that focuses on the historical significance of the location, as well as the park's cultural and natural resources. Recent discoveries and efforts to gather information regarding the park's role in WWII events have yet to be interpreted to their fullest potential, further emphasizing the need for improved interpretation for all historic eras.

Control Motor Vehicle Speed in the Park and Provide Better Accessibility

During the project scoping, the public raised safety concerns regarding how fast motor vehicles go in the park. The public suggested methods to control the speed of motor vehicles in the park. Another issue raised was for the NPS to provide better accessibility to the park from the neighborhoods.

Maintain Open Space and Keep Existing Tree Cover

The public raised issues citing the need to maintain open space and keep existing tree cover.

Needed Improvements to Park Maintenance and Police Facilities

Maintenance operations (snow removal, road maintenance, etc) for Fort Hunt Park and the southern portion of the Parkway are conducted from a facility within Fort Hunt Park. Improvements to this outdated maintenance facility are needed. Planned improvements and possible downsizing of the maintenance facility will be considered through a separate planning process.

US Park Police operations for Fort Hunt Park, the southern portion of GWMP, and horse-mounted officers are conducted from a facility within Fort Hunt Park. The former police facility at this site burned down in 2009 and a temporary structure now houses the park police station. Planned improvements to the police facility will also be considered through a separate planning process.

Another issue raised by the public during scoping included additional staffing to support the park, such as the need for interpretive rangers to operate the visitor facility.

Peak Visitation Periods Cause Impacts to Park Neighbors

Fort Hunt Park is surrounded by residential neighborhoods at its north and west boundaries. NPS strives to keep park neighbors informed of park activities, while meeting objectives including resource protection and visitor use and experience outlined in the NPS Management Policies (2006). During peak picnic season, visitors sometimes create noise and parking issues for park neighbors. Another issue raised during scoping was to provide better accessibility to the park from the neighborhood and maintain access points.

IMPACT TOPICS

Impact topics are resources of concern that could be affected either beneficially or adversely by the range of alternatives. The impact topics were considered in accordance with all applicable federal and state environmental regulations, policies, and orders.

Soils

Construction of a new visitor facility, reconfiguration of circulation patterns, and the construction of interpretive trails would result in soil disturbance. Also, existing drainage has caused soil loss. As a result of potential impacts to soils that would occur from both the No Action and Action Alternatives, soils is addressed as an impact topic in this EA/AoE.

Vegetation

Construction of a new visitor facility, reconfiguration of circulation patterns, and the construction of interpretive trails would result in impacts to vegetation. The potential impacts and mitigation measures to minimize impacts to vegetation need to be assessed. As a result of potential impacts to vegetation that would occur from both the No Action and Action Alternatives, vegetation is addressed as an impact topic in this EA/AoE.

Wildlife and its Habitat

Construction of a new visitor facility, reconfiguration of circulation patterns, and the construction of interpretive trails would impact wildlife habitat. As a result of potential impacts to wildlife habitat that would occur from both the No Action and Action Alternatives, wildlife and its habitat is addressed as an impact topic in this EA/AoE.

Cultural Resources

The NHPA, NEPA, the NPS Organic Act, NPS 2006, DO-12, and DO-28 require the consideration of impacts on any cultural resource that might be affected by a proposed federal action. The NHPA specifically requires consideration of impacts on a cultural resource either listed in, or eligible to be listed in, the National Register of Historic Places (NRHP). Cultural resources include archeological resources, cultural landscapes, historic structures and districts, ethnographic resources, and museum objects, collections, and archives. Historic structures and districts, cultural landscapes, and archeological resources will be analyzed in this EA/AoE.

Historic Structures or Districts

Historic structures or districts are defined as historic properties significant in the history of American architecture, culture, engineering, or politics at the national, state, or local level. The project area contains historic structures that may be impacted by both the No Action and Action Alternatives; therefore, historic structures are addressed as a topic.

Cultural Landscapes

As specified in Chapter 5 of the NPS Management Policies (2006), the NPS is committed to identifying, documenting, and protecting cultural resources. Cultural landscapes are defined as a geographic area, including both cultural and natural resources and the wildlife and wildlife habitat or domestic animals therein, associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values. The project area contains cultural landscapes that may be impacted by both the No Action and Action Alternatives; therefore, cultural landscapes are addressed as a topic.

Archeological Resources

Archeological resources include material remains or physical evidence of past human life or activities of archeological interest. The project area has the potential to contain archeological resources that may be impacted by the Action Alternatives; therefore, archeological resources are addressed as a topic.

Visitor Use and Experience

Construction of a new visitor facility, reconfiguration of circulation patterns, and the construction of interpretive trails, would impact visitor use and experience. One objective of the SDP is to enhance the visitor experience and manage visitor use. Additionally, vehicular and pedestrian circulation changes would be included in the SDP to address issues of vehicular speeds within the park and potential conflicts between pedestrians/bicyclists sharing the park loop road with vehicular traffic. As a result of potential impacts to visitor use and experience that would occur from both the No Action and Action Alternatives, visitor use and experience is addressed as an impact topic in this EA/AoE.

Park Operations and Management

Peak visitation periods exceed the park's carrying capacity and overwhelm the park infrastructure, including restrooms and parking. Conflicts occur with park neighbors during times of peak visitation when parking overflows onto adjacent streets and large picnics result in noise issues. One objective of the SDP is to determine infrastructure and facility needs. As a result of potential impacts to park operations and management that would occur from the No Action and Action Alternatives, park operations and management is addressed as an impact topic in this EA/AoE.

IMPACT TOPICS DISMISSED FROM FURTHER ANALYSIS

The topics discussed below would either not be affected or would be affected negligibly by the alternatives evaluated in this document. Therefore, these topics have been briefly discussed in this section of the EA/AoE and then dismissed from further consideration or evaluation. Negligible effects are effects that are localized and immeasurable at the lowest level of detection.

Geology

Fort Hunt Park is situated in the Coastal Plain physiographic province (Bailey 1999). Geology of the region is characterized by thick, unconsolidated marine sediments (William and Mary n.d.). Mineral resources of the Coastal Plain consist of silts, sands, and gravels which are used as aggregate materials. None of the proposed actions would include activities that would affect geologic resources. Therefore, geology was dismissed from further analysis.

Geologic Hazards

Fort Hunt Park is set in a flat, low-lying area that is not prone to sinkholes and has a low risk of earthquakes (USGS 2008; DMME 2006). No geologic hazards are expected to occur in the project area. Therefore, geologic hazards was dismissed from further analysis.

Topography

Fort Hunt Park is characterized by low relief ranging from 0 to 50 feet above mean sea level. Historical use of the land has caused some disturbance to its original topographic setting. Currently, the park open space and maintained areas consist of one to five percent slopes with moderately sloping drainage channels that predominately drain towards the Potomac River. The woodland areas on the southern portion of the park consist of 5 to 35 percent slopes. Minor grading would be required for construction activities under the proposed actions. The proposed actions to construct new facilities or remove existing facilities would include some excavations to construct or remove footers or foundation; however, the NPS would use best management practices and fill excavated areas with appropriate fill material to restore areas and maintain grades. As a result, topography would not be altered and therefore, was dismissed from further analysis.

Prime and Unique Farmland

The Farmland Protection Policy Act of 1981 and the NPS require an evaluation of impacts on prime and unique agricultural lands to minimize the extent to which federal programs contribute to the unnecessary or irreversible conversion of farmland to nonagricultural uses. Prime farmland is defined as land with the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and which is also available for these uses. According to the Natural Resources Conservation Service (NRCS), several soil types within the Fort Hunt Park SDP boundary are designated as prime farmland soils. However, Fort Hunt Park is not currently in agricultural production and no plan currently exists to convert the park into agricultural lands in the future. Therefore, prime and unique farmland was dismissed from further analysis.

Hydrology

Stormwater runoff refers to precipitation that is discharged across the land surface or through conveyances to one or more waterways. In order to reduce the harmful effects of stormwater runoff, such as damage to infrastructure, erosion of stream channels, and the spread of pollutants, the National Pollutant Discharge Elimination System program of the Clean Water Act regulates discharges to navigable waters from point sources (CWA Section 402). Pursuant to the Clean Water Act, the Virginia Stormwater Management Program is the permit issuing authority for the initiation of stormwater discharges (VDCR 2004).

In general, hydrology at Fort Hunt Park consists of sheet flow that is directed offsite. In the northwest corner of the park, a grass swale conveys storm waters to the west into residential areas. In the southern reaches of the park, dry stream channels discharge to wetlands which are conveyed beneath the Parkway. Due to the flat topographic setting of the land, existing stormwater infrastructure is minimal at Fort Hunt Park. Mainly, gently sloping grass swales convey sheet flow to forested lands of the park, which reduce the flow velocity of the runoff. Also, the forests intercept excess sediments, nutrients, organic materials, etc. from the runoff before it is discharged to receiving waters. There are numerous small area drains, roadway inlets, and culverts beneath the roads which contribute to sheet flow throughout the park. Sheet flow in the northern portion of Fort Hunt Park drains to Little Hunting Creek, while sheet flow in the southern portion drains to the Potomac River.

The proposed actions are not located in drainage channels throughout the park. The existing hydrologic features on site would be expected to maintain their current function. The proposed alternatives would result in a decrease in impervious surface, resulting in a benefit to stormwater management. Because the proposed actions would not adversely impact hydrology, this impact topic was dismissed from further analysis.

Water Quality

NPS policy regarding water quality is to avoid, whenever possible, “the pollution of park waters by human activities occurring within and outside the parks” (NPS 2006). In order to preserve water quality, the NPS requires water quality protection consistent with the CWA. Under the CWA, pollution control programs and water quality standards are set by the EPA.

Fort Hunt Park is situated within the Little Hunting Creek watershed, which is bisected by two sub-watersheds: South Little Hunting Creek and East Potomac River. The northern portion of Fort Hunt Park drains to Little Hunting Creek, while the southern portion drains to the Potomac River. Water quality of both of the sub-watersheds has been compromised due to urban development in the region. The impervious area in the Little Hunting Creek watershed is approximately 25 percent of the total area (Fairfax County 2004).

In 1988, the Commonwealth of Virginia enacted the Chesapeake Bay Preservation Act (Bay Act). The Bay Act required the 84 Virginia communities, including Fairfax County, which border on the tidal portions of rivers that drain into the Chesapeake Bay (Tidewater jurisdictions) to institute water quality protection measures to improve the declining health of this unique national resource and its tributaries. Fairfax County enacted a Chesapeake Bay Preservation Ordinance (Ordinance) which regulates the kinds of development that can occur in sensitive areas along streams that drain into the Potomac River and eventually the bay. These are known as Resource Protection Areas (RPAs).

State regulations require that RPAs be designated around all water bodies with perennial flow. The Department of Public Works and Environmental Services conducted field studies to identify all perennial streams throughout the county and used this information to prepare a set of maps showing the location of RPAs as defined under the revised Ordinance (Figure 3)(Fairfax County 2010a).

RPAs generally are areas into which development may not encroach. However, the ordinance protects existing structures and uses in the RPA. Such structures and uses, including lawns and gardens and other maintained landscaping, can remain and be maintained but may not be expanded unless a waiver or exception is granted. In order to maintain the functional value of the RPA buffer, indigenous vegetation may be removed, subject to approval by the county, from a buffer area only to provide for reasonable sight lines, access paths, general woodlot management and habitat management. Noxious weeds and dead, diseased, or dying trees or shrubbery may be removed, subject to approval by the county, provided that where they are removed, they are replaced with other native vegetation that is equally effective in retarding runoff, preventing erosion and filtering nonpoint source pollution from runoff. The removal of indigenous vegetation to create lawns is not allowed.

Implementation of the No Action or Action Alternatives at Fort Hunt Park would have negligible impacts on water quality. No construction activities or clearing would occur within the RPA. Construction under the Action Alternatives would take place in previously disturbed areas, and site design would limit new impervious surface in the park to the extent feasible. Short-term best management practices (BMPs), such as erosion and sediment control during construction, would be implemented to prevent disruptions to nearby water resources. Long-term BMPs, such as site designs established by the Sustainable Sites Initiative, would

be incorporated into the proposed actions in order to reduce impacts. No receiving waters are in the areas of the proposed actions. The nearest receiving water body is a small wetland area in the southern portion of the park (formally excavated CCC pond). The wetland is buffered by a mature forest, and is approximately 400 feet from any proposed construction activity.



Figure 3. Resource Protection Area Map

Due to the existing site layout, proposed site design, and implementation of short-term and long-term BMPs, water quality impacts of the No Action or Action Alternatives would be negligible; therefore, water quality was dismissed from further consideration.

Wetlands

The NPS recognizes the USFWS wetland definition as outlined in *Classification of Wetland and Deepwater Habitats of the United States* (Cowardin 1979). This classification system generally states that wetlands are

transitional lands between terrestrial and aquatic systems. Saturation with water determines the nature of soil development and the types of plant and animal communities that inhabit wetlands.

A review of the USFWS National Wetlands Inventory (NWI) indicates that palustrine forested wetlands exist in the southern portion of the park (USFWS 2011). The palustrine forested designation describes wetlands that are nontidal, and are dominated by woody vegetation 6 meters tall or taller. The wetlands occupy approximately 0.6 acres. A field review of natural resources by the project consultants on January 24, 2011 verified the presence of palustrine forested wetlands in the area. Saturated conditions were observed as a result of the low-lying aspect of the area, and as a result of the barrier to outflow created by the George Washington Memorial Parkway. NWI Mapping of Fort Hunt Park is provided in Figure 4.



Figure 4. National Wetland Inventory Map

Construction activities in wetlands would be avoided under all of the proposed Action Alternatives. The wetlands in the south of the park are approximately 400 feet from proposed construction activities, and are buffered by a mature forest stand. Hydrology of the wetlands would be undisturbed by the proposed actions, because all new construction on site is to occur in previously disturbed areas. Therefore, because there would be no direct impacts to wetlands under the No Action or Action Alternatives, this topic was dismissed.

Floodplains

In order to preserve floodplain values and minimize potentially hazardous conditions associated with flooding, the NPS requires examination of impacts to floodplains and potential risk involved with placing facilities within floodplains. Based on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Mapping of Fort Hunt Park (Figure 5), portions of the site are within the 100-year floodplain (FEMA 2010). These areas occur along the site’s southern boundary, the Parkway. None of the proposed actions include construction within the 100-year floodplain.

Indirect impacts to the floodplain due to the removal of ground vegetation and increases in impervious surfaces are expected to be negligible. The existing floodplain areas are buffered by riparian vegetation, which would not be disturbed by the proposed actions. New construction is not expected to increase the frequency, duration, or elevation of floods at Fort Hunt Park. Therefore, floodplains was dismissed from further analysis.

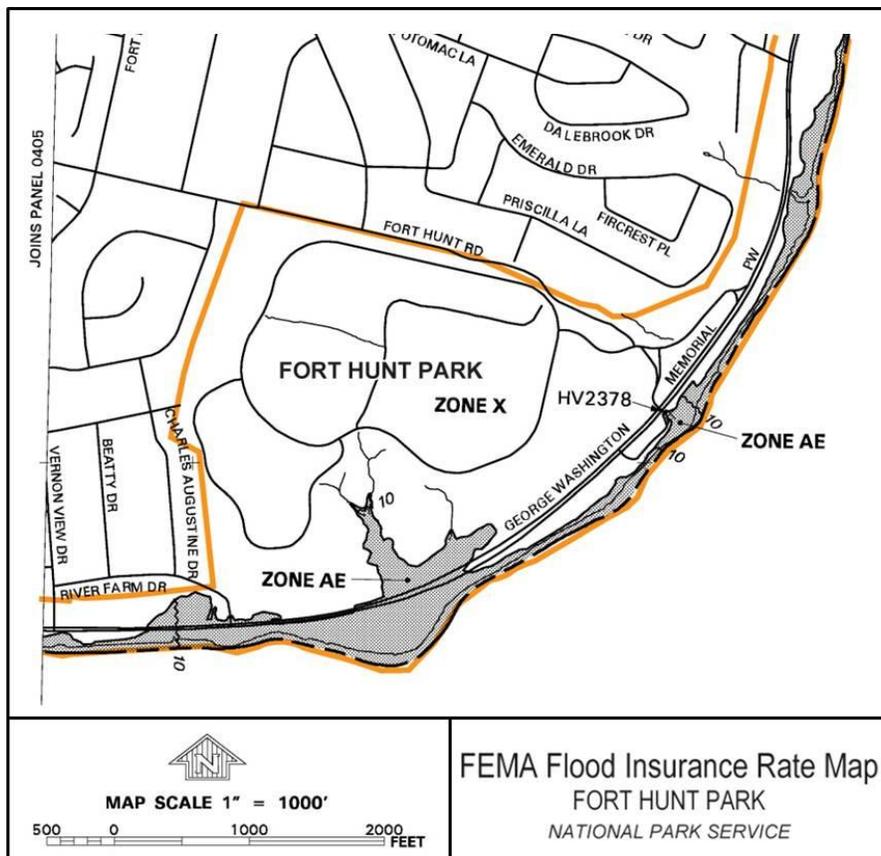


Figure 5. FEMA Flood Insurance Rate Map

Rare, Threatened, and Endangered Species

The Endangered Species Act of 1973 (16 U.S.C. §1531 et seq.) provides for the protection of ecosystems upon which threatened and endangered species of fish, wildlife, and plants depend. Section 7 of the Endangered Species Act requires federal agencies to insure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat. Pursuant to the Act, NPS policy is to “proactively conserve listed species and prevent detrimental effects on these species” (NPS 2006).

An online database search for federally proposed, listed, and candidate species including federally designated critical habitats was conducted for the Fort Hunt SDP. Based on the search results, Fort Hunt Park includes habitat that has the potential to support two federally-threatened plant species. The species are sensitive joint-vetch (*Aeschynomenevirginica*), an annual legume which is found along the fringes of marshes or shores, and small whorled pogonia (*Isotriamedeoloides*), an herbaceous perennial orchid, which is found in upland forests with an open understory and a closed canopy. However, none of the actions proposed by the Fort Hunt Park SDP would require disturbance within the habitats of sensitive joint-vetch or small whorled pogonia. Construction would take place in previously disturbed areas that do not support these species. Also, BMPs would be implemented during construction in order to prevent disruption to habitat areas. Therefore, because there would be no impacts to federally listed rare, threatened or endangered species, this topic was dismissed from further consideration.

Correspondence with the Virginia Department of Conservation and Recreation indicated a bald eagle (*Haliaeetusleucocephalus*) nest has been identified in the vicinity of Fort Hunt Park (see Appendix B). The species is listed in Virginia as a natural heritage resource of concern; however, as of August 2007, the bald eagle is no longer a federally listed species. Further information concerning bald eagle protection is addressed under *Wildlife* in Chapters 3 and 4 of this EA/AoE.

Museum Collections

Museum collections include prehistoric and historic objects, artifacts, works of art, archival documents, and natural history specimens. Prevention of damage and minimization of potential for deterioration are NPS management goals. No museum collections would be impacted and therefore this topic has been dismissed from further analysis.

Ethnography

Ethnographic resources include cultural and natural features of a park that are of traditional significance to traditionally associated peoples, which include contemporary park neighbors and ethnic or occupational communities that have been associated with a park for at least two or more generations (40 years), and whose interests in the park's resources began before the park's establishment. No ethnographic resources would be impacted and therefore this topic has been dismissed from further analysis.

Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed action by Department of Interior agencies be explicitly addressed in environmental documents. The Federal Indian Trust responsibility is a legally enforceable obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaskan native tribes. Based on consultation with the NPS Cultural Resources Manager and Virginia Council on Indians, there are no known Indian trust resources in the study area. The lands comprising the park are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, this impact topic was dismissed from further analysis.

Scenic Resources (Aesthetics and Viewsheds)

The alternatives would not noticeably alter views or affect scenic resources within the park. New facilities are generally located away from existing historic structures such as the NCO Quarters and batteries; therefore,

they would not affect important views in the park. For this SDP, the impacts to views are briefly described in this EA/AoE in the Cultural Landscape section. Therefore, this impact topic was dismissed from further analysis.

Human Health and Safety

In accordance with the 1916 Organic Act, the NPS strives to protect human life and provide injury-free visits while preserving human life over all other management actions. All proposed actions at Fort Hunt Park represent a continuation of existing operations and maintenance of the park. The changes in visitor use of the park are not expected to impact the health and safety of park visitors or personnel in any measurable way. Safety concerns were raised by the public during scoping if the loop road were to be reopened because of past illicit activities in this area. This safety concern was taken into consideration with the development of the alternatives by either making the loop road part of the main loop in the park, which would make it less secluded and increase the park police presence or this road would remain closed. The alternatives include actions such as a separate bicycle/pedestrian trail from the road that would help to minimize potential conflicts between pedestrians/bicyclists and motorists; thus, there would be beneficial impacts on health and safety. During construction, minor short term risks to the health and safety of construction workers are expected. All workers would follow an approved health and safety plan, which would incorporate all applicable regulations. Because the proposed actions are not expected to have any other impacts to human health and safety, this topic was dismissed from further analysis.

Natural Soundscapes

In accordance with NPS Management Policies (2006) and DO-47, Sound Preservation and Noise Management, an important part of the NPS mission is preservation of natural soundscapes associated with national park units. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-caused sound considered acceptable varies among NPS units, as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

Fort Hunt Park is surrounded by suburban neighborhoods and the George Washington Memorial Parkway. As a result, the opportunity to experience natural soundscapes within the park is highly degraded. Construction associated with implementation of the proposed action, e.g. the hauling of material or the operation of construction equipment, could result in dissonant sounds, but such sounds would be temporary. Once construction is complete vehicle noise through the park would exist at roughly the same levels as it does today. Since there would be no change in the artificial noise level and NPS policies allow for greater overall magnitudes of human-caused sound in developed areas, this topic was dismissed from further analysis.

Transportation

Fort Hunt Park is located along the Parkway, a scenic route maintained by the NPS. The Parkway extends from the Capital Beltway (I-495) to Mount Vernon in Fairfax County, VA, following the Potomac River. The Parkway is intended not only to provide transportation, but to provide recreation and environmental conservation areas (NPS 2008b). The primary north and south access to the park is from Parkway exits. Fort Hunt Road also provides access to the park and to surrounding residential properties. The roadway within Fort Hunt Park generally forms a loop following the perimeter of open spaces in the park.

Construction of the Action Alternatives would be short-term in nature. No construction activity is proposed outside of Fort Hunt Park. The Action Alternatives propose a realignment of the entrance road to Fort Hunt Park and improved signage to notify park visitors of their arrival to the park. This realignment and change in signage would have a beneficial impact to traffic and transportation by improving park access. The Action Alternatives involve changes to the internal circulation patterns within Fort Hunt Park; however, these changes would not impact traffic and transportation outside of the park. Additional multi-use trails proposed under the Action Alternatives would have a beneficial impact to the trail network. Because neither the No Action nor Action Alternatives would impact the surrounding roadway network, this topic has been dismissed from detailed analysis in this EA/AoE.

Land Use

Fort Hunt Park occupies 105 acres in Fairfax County, Virginia and is entirely designated to the use of the federal government. To the south and to the east, Fort Hunt is bordered by the Parkway and the Potomac River. To the north and to the west, the park is bordered by private properties, consisting of single family homes. The proposed actions are expected to have negligible impacts on land uses of the area, because the proposed actions would not change the existing land use at Fort Hunt Park. Fort Hunt would remain a park offering the same type of recreational activities, which also would include a visitor facility. Therefore, this topic was dismissed from further analysis.

Socioeconomics

NEPA requires an analysis of impact to the human environment including social, economic, and demographic elements in the project area. Construction of Action Alternatives may provide a temporary benefit to the local economy with the hiring of construction workers and an increase in local revenue generated from the construction workers and activities. However, this beneficial effect is expected to be minimal and temporary.

Fort Hunt Park does not permit commercial operations at the park. However, the pavilion and picnic area renters often hire caterers, entertainers, and/or rental equipment such as sound systems or inflatables from businesses throughout the Mount Vernon/Alexandria Virginia area. The Action Alternatives would reduce the number of picnic pavilions and areas at Fort Hunt Park, resulting in a reduced number of vendor rentals by park users. However, it is anticipated that groups would continue to hold events, outside of Fort Hunt, and would still require vendor services at these events. Approximately 26 reservable picnic areas are available in Fairfax County, Virginia through the county park system (Fairfax County 2011h). Additionally, Mason Neck State Park had a reservable picnic area. This park is in the southern portion of Fairfax County.

The No Action and Action Alternatives are not expected to have any appreciable short or long-term impact on socioeconomics of the surrounding area; therefore, this topic is dismissed from further analysis.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, directs federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority or low-income populations.

Fort Hunt Park is in Census Tract (CT) 4157 (U.S. Census Bureau, 2000). According to the 2000 census, CT 4157 had a total population of 3,611. Approximately 19 percent of the population is age 65 and over. The

population is approximately 95 percent Caucasian, 2 percent Hispanic, 2 percent Asian, and 1 percent African American. In 1999, about 1.5 percent of families and 2 percent of individuals within CT 4157 were below the poverty level. Minorities and low-income populations do exist in CT 4157; however, no populations were identified as disproportionately impacted by the SDP.

Environmental justice is dismissed from further analysis for the following reasons:

- As part of the planning process, public participation was actively sought by the NPS and gave equal consideration to all input from all persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- The proposed actions would not result in any identifiable adverse human health effects; therefore, there would be no direct or indirect effects on any minority or low income population.
- The impacts associated with the proposed actions would not disproportionately affect any minority or low income population.
- The impacts associated with the proposed actions would not result in any identified effects that would be specific to any minority or low income population.

Air Quality

The 1963 Clean Air Act requires federal land managers to protect air quality in national parks. Under the authority of the Clean Air Act, EPA has developed National Ambient Air Quality Standards (NAAQS) for six criteria pollutants deemed harmful to public health and the environment. These pollutants are: nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon dioxide (CO₂), ozone (O₃), particulate matter equal to or less than 10 microns in size (PM₁₀), fine particulate matter (PM_{2.5}), and lead (Pb). Areas where concentrations of criteria pollutants are below the NAAQS are designated as being in “attainment” and areas where a criteria pollutant level exceeds the NAAQS are designated as “nonattainment” by the EPA. Fine particulate matter includes all particles with a diameter less than or equal to 2.5 microns.

Fort Hunt Park is currently within a designated nonattainment area for ground-level ozone and PM_{2.5} nonattainment area (MWWCOG, n.d.). Northern Virginia is part of the larger Washington, DC nonattainment area made up of the District of Columbia and jurisdictions from both Maryland and Virginia. The Metropolitan Washington Council of Governments has developed a State Implementation Plan to guide in improvements to air quality in the Washington, DC region. The State Implementation Plan provided an inventory of existing air emissions and accounts for planned projects within the region that have potential to increase pollution emissions. The State Implementation Plan accounts for general increases in vehicular travel throughout the region as well as anticipated changes in land use and demographic/employment patterns.

Due to construction, dust and vehicle emissions would cause short term impacts to local air quality in the study area. The impacts are associated with hauling materials and operating power equipment, and are expected to be negligible.

Once construction at Fort Hunt Park is complete, the changes in visitor use of the park are not expected to increase impacts to air quality in any measurable way. Also, the proposed actions are not intended to increase the amount of visitors to the park. As such, impacts to the park’s current level of air quality with regard to vehicle emissions are unlikely to occur. Therefore, air quality was dismissed from further analysis.

Energy Requirements and Conservation Potential

The NPS strives to incorporate the principles of sustainable design and development into all facilities and park operations. Sustainability can be described as the result achieved by doing things in ways that do not compromise the environment or its capacity to provide for present and future generations. Sustainable practices minimize the short- and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy efficient and ecologically responsible materials and techniques. Value analysis and value engineering, including life cycle cost analysis, are also performed to examine energy, environmental, and economic implications of proposed management decisions and development. The park also encourages suppliers, permittees, and contractors to follow sustainable practices. Consequently, any adverse impacts relating to energy use, availability, or conservation would be negligible. Therefore, energy requirements and conservation potential is an impact topic dismissed from further consideration.

Climate Change

Climate change refers to any significant changes in average climatic conditions (such as mean temperature, precipitation, or wind) or variability (such as seasonality and storm frequency) lasting for an extended period (decades or longer). Recent reports by the U.S. Climate Change Science Program, the National Academy of Sciences, and the United Nations Intergovernmental Panel on Climate Change provide evidence that climate change is occurring as a result of rising greenhouse gas (GHG) emissions and could accelerate in the coming decades.

While climate change is a global phenomenon, it manifests differently depending on regional and local factors. General changes that are expected to occur in the future as a result of climate change include hotter, drier summers; warmer winters; warmer water; higher ocean levels; more severe wildfires; degraded air quality, more heavy downpours and flooding, and increased drought. Climate change is a far-reaching, long-term issue that could affect the park, its resources, visitors, and management. Although some effects of climate change are considered known or likely to occur, many potential impacts are unknown. Much depends on the rate at which the temperature would continue to rise and whether global emissions of greenhouse gases can be reduced or mitigated. Climate change science is a rapidly advancing field and new information is being collected and released continually.

Construction activities associated with implementation of the proposed action would contribute to increased GHG emissions but such emissions would be short-term, ending with the cessation of construction, and it is not possible to meaningfully link the GHG emissions of such individual project actions to quantitative effects on regional or global climatic patterns. Any effects on climate change would not be discernible at a regional scale. Therefore, climate change was dismissed from further evaluation.

IMPAIRMENT

According to NPS Management Policies (2006), an action constitutes an impairment when an impact “would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values” (NPS 2006 sec. 1.4.5). Whether an impact meets this definition depends on the particular resources and values that would be affected; the severity, duration, and timing of the impact; the direct and indirect effects of the impact; and the cumulative effects of the impact in question and

other impacts. An impact on any park resource or value may constitute an impairment, but an impact would be more likely to constitute an impairment to the extent that it affects a resource or value whose conservation is:

Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; key to the natural or cultural integrity of the park or to the opportunity for enjoyment of the park; or identified as a goal in the park's general management plan or other relevant NPS planning documents.

Impairment findings are not necessary for visitor experience and park operations because impairment findings relate back to park resources and values, and these impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired the same way that an action can impair park resources and values. A draft impairment determination for the NPS preferred alternative is provided in Appendix A of this EA/AoE. Park resources considered in this determination include soils, vegetation, wildlife, cultural landscapes, historic structures and districts, and archeological resources. A final impairment determination will be provided in the decision document developed on the findings of this EA/AoE.

CHAPTER 2: ALTERNATIVES

INTRODUCTION

NEPA requires that federal agencies explore a range of reasonable alternatives. The alternatives under consideration must include a “No Action” alternative as prescribed by 40 CFR 1502.14. Any alternative analyzed must meet the management objectives of GWMP for Fort Hunt Park, either wholly or partially, while also meeting the purpose of and need for the project.

Project alternatives may originate from the proponent agency, local government officials, or members of the public. Alternatives may also be developed during the early stages of project development at public meetings or in response to agency comments. The alternatives analyzed in this document are the result of internal scoping, public scoping, and agency consultation. The components of the Action Alternatives represent the outcome of extensive collaboration between the NPS, the consultant design team, and regulatory review agencies in the project area.

The NPS explored and objectively evaluated a range of alternatives. After extensive collaboration between the NPS and the project team consultant’s designers and engineers, several alternatives were dismissed from consideration and four alternatives (the No Action Alternative and three Action Alternatives) were carried forward for further analysis. These are described in this chapter.

The Fort Hunt Park maintenance facilities and US Park Police station and stables were initially considered as part of this planning process. Since the planning required for any kind of improvements or relocation of these facilities are not relevant to the core purpose of this Site Development Plan, it has been determined they should not be dealt with in this alternatives assessment.

DESCRIPTION OF ALTERNATIVES

ALTERNATIVE A: NO ACTION

The No Action Alternative describes the action of continuing the present management operations and conditions. It does not imply or direct discontinuing the present action or removing existing uses, development, or facilities. While the No Action Alternative does not meet the purpose and need of the project, it provides a basis for comparing the management direction and environmental consequences of the proposed Action Alternatives.

VEHICULAR CIRCULATION AND PARKING

There is currently one vehicular entrance to Fort Hunt Park from the Parkway. Under the No Action Alternative, the park entrance road would continue at its current alignment. The roadway within Fort Hunt Park generally forms a loop following the perimeter of open space in the park. Traffic along the loop road is two-way from the park entrance to Parking Area B. Beyond this parking area, traffic is designated as one-way throughout the remainder of the loop. A paved road connects to the loop road at the south of the park. This road has been closed to vehicular traffic and is used by park visitors as a walking and biking trail. Parking is provided at five lots, within close proximity to the picnic pavilions and areas.

INTERPRETIVE FACILITIES

Currently, visitors to the park can explore the exteriors of former gun batteries and the Battery Commander's Station. A series of eight wayside exhibits interpret various aspects of the site's history. A WWII exhibit consists of commemorative plaque on a stone marker. These resources, while providing some opportunities to interpret history, are limited in communicating the depth and diversity of the history at Fort Hunt.

PARK OPERATIONS FACILITIES

This represents a continuation of existing park police and maintenance operations at the park. The maintenance facility and park police station would remain in their current locations. Needed improvements to these outdated and/or temporary facilities will be considered through a separate planning process.

RECREATIONAL FACILITIES

Recreational facilities would continue to be managed and maintained as they are today. Picnic Pavilions/Areas A, B, C, and D would continue to be available by reservation and Picnic Area E would be available on a first come basis. The ball fields, volleyball court, and playground would continue to be maintained in their current state.

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

The four gun batteries, Battery Commander's Station, and NCO Quarters would continue to be maintained by the park. Cultural landscape features such as the row trees, commemorative trees near the NCO Quarters, and other CCC features would not be impacted.

ELEMENTS COMMON TO ALL ACTION ALTERNATIVES

Based on site inspection, discussion among the superintendent, park division heads, interpretive staff, NPS planning and design professionals, and comments from the public, the SDP has identified feasible and suitable sites for the construction of new facilities. New facilities would be oriented to minimize ground disturbance and would occur in previously disturbed areas that have undergone archeological survey and in areas that are, to the extent feasible, void of mature vegetation. Archeological investigations would be conducted prior to land disturbance if construction is proposed in areas determined to have archeological potential. Consultation with VDHR and other consulting parties would continue for each construction project proposed under the Action Alternatives.

Prior to implementation of any specific elements outlined in the SDP, BMPs would be incorporated to avoid or minimize disruptions to natural and cultural resources. BMPs could include, but would not necessarily be limited to, tree protection measures, erosion and sediment control measures, construction staging, hand removal of vegetation as necessary, etc. Site drainage would be integrated with the existing storm sewer, and stormwater management measures would be implemented to improve the overall quality of the water that flows off the property.

All facility designs would incorporate universal design concepts to maximize accessibility for all visitors, including those with disabilities, to the greatest extent possible. New pedestrian facilities would meet outdoor accessibility guidelines as outlined in the *Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas: Final Report* (ATBCB 1999). All new or reconstructed routes to public facilities

for individuals with disabilities would meet the *Proposed Architectural Barriers Act Accessibility Guidelines for Outdoor Developed Areas* (36 CFR Part 1195).

Sustainable design practices that follow principles established by the Leadership in Energy and Environmental Design (LEED®) and the Sustainable Sites Initiative (SSI) for planning of the architectural and site features would also be incorporated in the design or removal plans for park facilities. These practices would guide the implementation of individual projects toward lower-impact and more sustainable built environments. The overarching goal with locating new or replacing existing facilities is to avoid and protect the cultural and natural resources including the cultural landscape, archeological resources, and the overall setting of Fort Hunt Park.

VEHICULAR CIRCULATION AND PARKING

Under the Action Alternatives, the park entrance road would be realigned creating a perpendicular intersection with Fort Hunt Road. The new entrance would make the park entrance more prominent and create an enhanced sense of arrival. In addition, the realignment would reduce current confusion associated with this intersection. A new entry sign and gate would be included to clearly designate the park entrance to visitors.

The lower portion of the main loop road between existing Picnic Pavilion D and Picnic Area E would be removed or realigned. Parking Areas D and E would be removed with implementation of each of the Action Alternatives. Removal of Parking Areas D and E as well as the realignment of the loop road would remove infrastructure and visitor activities in sensitive resource areas and overall enhance the cultural landscape consistent with the project objectives. Revegetation would follow a management process as appropriate, which could include seeding with grass and maintaining the area as open space.

INTERPRETIVE FACILITIES

Under each of the Action Alternatives, a new visitor facility would be constructed to provide interpretive and educational opportunities for visitors. The location of the visitor facility would influence the focus of the interpretive experience; therefore, different locations for the visitor facility have been evaluated under the Action Alternatives. The new visitor facility would improve the ability of GWMP to interact with park visitors and would increase educational and interpretive opportunities. A visitor facility would enhance the visitor experience consistent with the project objectives and goals outlined in the GWMP Long-Range Interpretive Plan for Fort Hunt Park.

While only evaluated at a conceptual level in this plan, the visitor facility could include exhibit space, work and storage space, a multipurpose room, administration support space, restroom facilities, and outdoor space. The visitor facility could occupy a footprint no larger than 6,400 square feet. An exterior interpretive area could provide outdoor opportunities for learning about the park's history within the contextual historic features of the park. Further study would be conducted during the future design phase to determine the final size, components and exact location of the facility. The design of the visitor facility would be appropriate for the park context and would meet the *Secretary of the Interior's Standards for Treatment of Historic Properties*, specifically those outlined in the *Guidelines for the Treatment of Cultural Landscapes*.

A chronological interpretive trail system is included in each of the Action Alternatives and would provide a walking history of the park. This trail would originate from the site of the proposed visitor facility and begin with the history of the Native Americans who inhabited the site prior to European colonization. The trail would continue a loop through the park, telling the story of the site's role as George Washington's River Farm,

through the Spanish-American War, as a facility for World War I (WWI) Bonus Marchers, as a Civilian Conservation Corps (CCC) Camp, its secret WWII military operations, to its present use as a national park and recreation facility. The final trail alignment, width, surface material, and other details would be determined as this element of the SDP reached the design phase. The new interpretive trail would be approximately 6,200 linear feet. The interpretive trail would be consistent with GWMP's interpretive theme elements for Fort Hunt Park identified in the GWMP Long-Range Interpretive Plan and further GWMP's ability to meet visitor experience goals.

Although there would be no direct connections to the interpretive trail from outside of Fort Hunt Park, the Mount Vernon Trail (MVT) is accessible from Fort Hunt Park. The MVT is a multi-use trail that parallels the Parkway from Mount Vernon Estate to the Theodore Roosevelt Island Parking Area.

RECREATIONAL FACILITIES

Under each of the Action Alternatives Picnic Pavilion B, Picnic Pavilion D and the adjacent ball field, and Picnic Area E and the nearby restroom facilities would be removed. Picnic facilities D and E are in the vicinity of WWII prisoner compound areas. Revegetation would follow a management process as appropriate, which could include seeding with grass and maintaining the area as open space. Removal of these pavilions and certain facilities outlined in the SDP is consistent with resource protection goals. The visitor facilities and services would be provided in parts of Fort Hunt Park that are more compatible with these uses. These services would continue to be available at the park for visitors.

PARK OPERATIONS FACILITIES

All proposed actions at Fort Hunt Park represent a continuation of existing park police and maintenance operations at the park. The maintenance facility and park police station would remain in their current locations. Needed improvements to these outdated and/or temporary facilities will be considered through a separate planning process.

However, the action alternatives would not include possible future developments within the existing maintenance or park police and paddock areas. These activities would be reviewed on an individual basis including preparation of the appropriate environmental compliance documents. The environmental consequences of changes to the maintenance or park police and paddock areas will not be evaluated as part of this SDP.

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

The NCO Quarters would receive a future undetermined treatment and could be further included in Fort Hunt Park's historical interpretive experience. The Spanish-American War era batteries and Battery Commander's Station would continue to be maintained by the park in accordance with the Fort Hunt Batteries Conditions and Treatment Plan. (NPS, 2002b) The Brick Storage Building (also known as the CCC Oil Storage House) as well as CCC trails would continue to be maintained. Impacts to historically significant tree rows, commemorative trees near the NCO Quarters, and CCC features would be avoided under each of the Action Alternatives. These activities, including maintenance and avoidance of resources, are consistent with the project objective to protect the park's cultural resources at Fort Hunt Park.

ALTERNATIVE B

Alternative highlights:

- Visitor facility added to Area B
- Picnic Pavilions B, C, D, and E removed
- Maintains most vehicular circulation amongst action alternatives
- Net decrease of approximately 4,300 square feet of pavement

Alternative B would, to the extent possible, maintain the current site organization and circulation of Fort Hunt Park. The proposed visitor facility and interpretive trails would be located within what is currently known as Picnic Area B. The placement of the visitor facility in this location would be clearly visible from many locations throughout the park, improving the way finding and site history interpretation experience. The proposed site and programmatic improvements would create opportunities for enhanced interpretive experiences while maintaining the existing organization and uses of the park. A balance between intense recreation areas and historic interpretation would be supported through the reduction of intense recreational uses, such as permitted picnicking, near significant park historic resources.

This alternative would minimize new ground disturbance. Alternative B would focus on the re-use of park facilities and infrastructure. All new construction elements discussed below are conceptual. Final designs of the visitor facility, park roadway alignments, and any other new construction would be decided upon based on the outcome of the archeological surveys, and would ultimately be positioned to avoid impacts to natural and cultural resources. A map of Alternative B is presented as Figure 6.

VEHICULAR CIRCULATION AND PARKING

Under Alternative B, vehicular circulation would follow the existing loop road around the perimeter of the park. Traffic along the loop road would be two-way from the park entrance to Parking Area B. Beyond this parking area, traffic would be designated as one-way as it follows the western and southern perimeter of the park and ultimately reconnects with the park entrance road. In the event of an emergency, park police and/or staff would use appropriate precautions to proceed in the opposite direction of the one-way traffic.

The proposed visitor facility, and all community park activities and interpretive trails, would be accessible via the loop road. Vehicular access to the maintenance and park police facilities would remain in their current locations. The roadway would be removed between existing Picnic Pavilion D and Picnic Area E as described in the Elements Common to Action Alternatives, and realigned to the south loop roadway, which is currently closed to through traffic. Removal of parking areas D and E as well as the loop road would remove infrastructure and visitor activities in sensitive resource areas and overall enhance the cultural landscape consistent with the project objectives. Including Elements Common to Action Alternatives, activities included under Alternative B would remove approximately 66,900 square feet of pavement and add 62,600 square feet of new pavement for a net decrease of approximately 4,300 square feet of pavement and this area would be converted to open space. Revegetation would follow a management process as appropriate, which could include seeding or plantings with vegetation suitable to the location within the park and desired visitor use.

Parking Areas A, B, and C would be retained under Alternative B, and no additional parking facilities would be constructed. Parking Area A would continue to be used in association with Picnic Pavilion A. In order to minimize ground disturbance, approximately 50 to 100 of the existing 150 parking spaces in Parking Area B

would be used for the visitor facility, and a drop-off area would be included in the design. The number of parking spaces required for the visitor facility would be determined during the design phase of the project. Remaining parking spaces would be retained for use by park visitors. As detailed in Elements Common to Action Alternatives, the removal of Parking Areas D and E would result in a reduction of approximately 15,000 square feet of pavement and converted to open space. Revegetation would follow a management process as appropriate.



Figure 6. Alternative B

INTERPRETIVE FACILITIES

The proposed visitor facility would be constructed at the current site of Picnic Pavilion B. The visitor facility would be visible from several vantage points throughout the park, and the architectural style of the visitor facility would be appropriate for the park context and would meet the *Secretary of the Interior's Standards for Treatment of Historic Properties*. The proposed visitor facility would have a footprint no larger than 6,400 square feet; a portion of this would be within the footprint of the existing Picnic Pavilion B. The interpretive trail, as described in the Elements Common to Action Alternatives, will be approximately 6,100 linear feet of new walking trails to enhance the interpretive experience. The interpretive trail would be consistent with GWMP's interpretive theme elements for Fort Hunt Park identified in the GWMP Long-Range Interpretive Plan and further GWMP's ability to meet visitor experience goals.

RECREATIONAL FACILITIES

Under Alternative B, permitted picnicking would be limited to Picnic Pavilion A. Site improvements would be implemented to the walking surfaces and site furnishings. Restroom facilities and visitor services would be provided for at Picnic Pavilion A and the proposed visitor facility.

Picnic Pavilion B would be removed to accommodate the visitor facility. Picnic Pavilions/Area C would also be removed. Along with the removal of Picnic Pavilion/Areas D and E as described in Elements Common to Action Alternatives, these actions would serve to reduce permitted picnicking on site and to achieve a balance of recreational activities, interpretive opportunities, and protection of cultural and natural resources.

Under Alternative B, one of three existing ball fields would be retained. The ball fields associated with Picnic Pavilions B and D would be removed to make way for the visitor facility and other interpretive and education experiences as proposed.

From the park entrance to Parking Area B, the road would remain striped for two-way vehicular traffic; the footprint of the road would be widened to accommodate a dedicated bicycle/pedestrian trail. From Parking Area B, one lane of the loop road would accommodate one-way vehicular traffic; the other lane would be converted to a dedicated bicycle/pedestrian trail. The bicycle/pedestrian trail would be striped and adequately signed to separate trail users from vehicular traffic.

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

Treatments of historic structures and cultural landscapes are described in Elements Common to Action Alternatives.

ALTERNATIVE C (PREFERRED ALTERNATIVE)

Alternative highlights:

- Visitor facility added to Area C
- Picnic Pavilions B, C, D and E removed
- Most reduced vehicular circulation amongst action alternatives
- Includes dedicated bicycle/pedestrian trail
- Net decrease of approximately 56,700 square feet of pavement

Alternative C would reduce the current site circulation throughout the park in order to enhance the overall visitor experience. The organization of the site program would create areas within the park specifically for permitted picnics, informal gatherings and recreation, designated walking and bike paths, and park historic interpretation. The highest intensity use areas would be located near the entrance of the site and the lower intensity use areas be developed near the center of Fort Hunt Park. Permitted picnic use would be maintained in Picnic Area A. The intensity of recreation would be reduced in Picnic Area B through the removal of the picnic pavilion and designation of this area for informal picnic and recreational active use. A separated pedestrian and bike trail would follow the old road alignment and improve visitor safety by minimizing car/pedestrian conflicts. The proposed visitor facility would replace the pavilion in Picnic Area C to establish the interpretive focus within the park. From the visitor facility, park visitors would have the opportunity to learn about Fort Hunt Park's historic and natural resources. A map of Alternative C is presented as Figure 7.

Under Alternative C, NPS would construct a new visitor facility in Picnic Area C. This alternative would emphasize minimizing vehicular circulation throughout the park, providing a more casual park recreation experience. Alternative C is focused on connecting open space and interpretive space throughout the park. All new construction elements discussed below are conceptual. Final designs of the visitor facility, park roadway alignments, and any other new construction would be decided upon based on the *Secretary of the Interior's Standards for the Treatment of Historic Properties*, the outcome of the archeological surveys, and would ultimately be positioned to avoid impacts to natural and cultural resources.

VEHICULAR CIRCULATION AND PARKING

Under Alternative C, vehicular access would be limited to the northern portion of the existing loop road. The southern portion of the loop road would largely be converted to a dedicated bicycle/pedestrian trail in order to connect open space and interpretive space without the disruption of vehicular traffic. The northern portion of the road would be configured for two-way traffic and would follow the current alignment from the intersection with the park entrance road to the Parking Areas A, B, and C. The road would terminate via a turn-around in Parking Area C at the site of the proposed visitor facility. The turn-around would be constructed within the existing parking area in order to minimize ground disturbance. Vehicular access to the maintenance and park police facilities would remain unchanged.

Including Elements Common to Action Alternatives, activities included under Alternative C would remove approximately 94,800 square feet of pavement and add 38,100 square feet of pavement for a net decrease of approximately 56,700 square feet of pavement. Southern portions of the loop road currently closed to vehicular traffic would be converted to a bicycle/pedestrian trail, and native vegetation would be reestablished where impervious surface would be removed. Revegetation would follow a management process as appropriate, which could include seeding or planting with vegetation suitable to the location within the park and desired visitor use.

Parking Areas A, B, and C would be retained, and no additional parking facilities would be constructed. Parking Area A would continue to be used in association with Picnic Pavilion A. Picnic Pavilion B and associated restrooms would be removed under this alternative; however Parking Area B would be retained for use by park visitors. In order to minimize ground disturbance, approximately 50 to 100 of the existing 150 parking spaces in Parking Area C would be used for the visitor facility, and a drop-off area would be included in the design. The number of parking spaces required for the visitor facility would be determined during the design phase of the project. Remaining parking spaces would be retained for use by park visitors. As detailed in Elements Common to Action Alternatives, the removal of Parking Areas D and E would result in a

reduction of approximately 15,000 square feet of pavement. Revegetation would follow a management process as appropriate.



Figure 7. Alternative C

INTERPRETIVE FACILITIES

The proposed visitor facility would be constructed at the current site of Picnic Pavilion C. This building would be situated within the woodlands, removed from the surrounding park’s recreational activities. The secluded location within the park would help to emphasize a connection to the natural and historical elements of the interpretive experience. The architectural style of the visitor facility would be appropriate for the park context

and would meet the *Secretary of the Interior's Standards for Treatment of Historic Properties*. The proposed visitor facility would have a footprint no larger than 6,400 square feet. A portion of the disturbed area includes the existing footprint of Picnic Pavilion C. The interpretive trail, as described in the Elements Common to Action Alternatives, will add approximately 6,160 linear feet of new walking trails to enhance the interpretive experience. The interpretive trail would be consistent with GWMP's interpretive theme elements for Fort Hunt Park identified in the GWMP Long-Range Interpretive Plan and further GWMP's ability to meet visitor experience goals.

RECREATIONAL FACILITIES

Under Alternative C, permitted picnicking would be limited to Picnic Pavilion A. Improvements would be made to the walking surfaces and site furnishings. Picnic Pavilion and Area C would be eliminated in order to accommodate the visitor facility and its associated educational and interpretive programs. Restroom facilities and visitor services would be provided for at Picnic Pavilion A and the proposed visitor facility. Picnic Pavilion B and the associated restroom would also be removed. This would create open space for interpretive programs emphasizing the relationship between the park's cultural and natural resources. Along with the removal of Picnic Pavilions/Areas D and E as described in Elements Common to Action Alternatives, these actions would serve to reduce permitted picnicking onsite and to achieve a balance of recreational activities, interpretive opportunities, and protection of cultural and natural resources.

Under Alternative C, two of the three existing ball fields would be retained. The ball field associated with Picnic Pavilion D would be removed to make way for interpretive and educational experiences.

A designated bicycle/pedestrian trail would be constructed as a separate facility and would run parallel to the existing loop road in the northern segment, traveling behind the park police station and paddocks. In the southern segment, the existing vehicular access road would be converted to a bicycle/pedestrian trail. The road width would be reduced by fifty percent to minimize impervious surfaces and to provide a natural experience along the trail. The area where asphalt is removed would be planted with native vegetation or appropriate vegetation treatment.

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

Treatments of historic structures and cultural landscapes are described in Elements Common to Action Alternatives.

ALTERNATIVE D

Alternative highlights:

- Visitor facility added to Area B
- Picnic Pavilions A, B, D and E removed
- Moderate reduction of vehicular circulation
- Includes dedicated bicycle/pedestrian trail
- Net decrease of approximately 5,500 square feet of pavement

Alternative D would focus Fort Hunt Park toward historic education and interpretive experiences through the removal of all permitted picnic pavilions and the reduction of vehicular circulation throughout the park. Fort Hunt Park would continue to be highly utilized for informal recreational and picnic use while providing a

stronger connection to the historic events through the introduction of a visitor facility. The visitor facility would be located in Picnic Area B, a location that is highly visible from most areas of the park emphasizing the park's historic significance. A separated pedestrian and bike trail would follow the old road alignment and improve visitor safety by minimizing car/pedestrian conflicts.

Alternative D would emphasize a reduced loop road that provides limited vehicular access to the centrally-located park features and overall reduces vehicular roadways within Fort Hunt Park. Alternative D is focused on the park's historic core. All new construction elements discussed below are conceptual. Final designs of the visitor facility, park roadway alignments, and any other new construction would be decided upon based on the outcome of archeological surveys, and would ultimately be positioned to avoid impacts to natural and cultural resources. Alternative D is depicted in Figure 8.

VEHICULAR CIRCULATION AND PARKING

Under Alternative D, the southern and eastern portions of the existing loop road would be completely closed to vehicular traffic and converted to a bicycle/pedestrian trail. Vehicular traffic would be two-way from the park entrance to a new traffic circle, located between Parking Areas A and B. Continuing from the traffic circle, a one-way loop road would follow the existing alignment to Parking Area C. From Parking Area C, the road would follow the existing entrance road to reconnect with the new traffic circle.

Including Elements Common to Action Alternatives, activities included under Alternative D would remove approximately 86,700 square feet of pavement and add 81,200 square feet of pavement for a net decrease of approximately 5,500 square feet of pavement. The currently unused southern portions of the loop road would be converted to a bicycle/pedestrian trail, and native vegetation would be reestablished where impervious surface would be removed. This improvement would address the project issues associated with conflicts between pedestrians/bicyclists and motorists using the loop road by providing designated areas. Revegetation would follow a management process as appropriate, which could include seeding or planting of vegetation suitable to the location within the park and desired visitor use.

The proposed road would provide access to the existing Parking Areas A, B, and C. A drop-off area would be provided within Parking Area B. Between 50 and 100 of the existing 150 parking spaces in this area would be utilized by the visitor facility. The number of parking spaces required for the visitor facility would be dependent on the final design. The remainder of the parking spaces throughout the park would be used for informal picnickers and recreational park users. No additional parking would be created. As detailed in Elements Common to Action Alternatives, the removal of Parking Areas D and E would result in a reduction of approximately 15,000 square feet of pavement. Revegetation would follow a management process as appropriate.

INTERPRETIVE FACILITIES

The proposed visitor facility would be constructed at the current site of Picnic Pavilion B. The visitor facility would be visible from vantage points throughout the park's historic core. The architectural style of the visitor facility would be appropriate to the historical setting and would meet the *Secretary of the Interior's Standards for Treatment of Historic Properties*. The proposed visitor facility would have a footprint no larger than 6,400 square feet. A portion of the disturbed area includes the existing footprint of Picnic Pavilion B. The interpretive trail, as described in the Elements Common to Action Alternatives, will add approximately 6,160 linear feet of new walking trails to enhance the interpretive experience. The interpretative trail would be

consistent with GWMP’s interpretative theme elements for Fort Hunt Park identified in the GWMP Long-Range Interpretative Plan and further GWMP’s ability to meet visitor experience goals.



Figure 8. Alternative D

RECREATIONAL FACILITIES

Permitted picnicking would be limited to Picnic Pavilion and Area C, which is set apart from the historic core of the park. Picnic Pavilion B would be removed to accommodate the visitor facility. Picnic Pavilion A would also be removed. Restroom facilities and visitor services would be provided at the proposed visitor facility.

Removal of Picnic Pavilion A would create continuity throughout the core of historic structures within the park. Along with the removal of Picnic Pavilions/Areas D and E as described in Elements Common to Action Alternatives, these actions would serve to reduce permitted picnicking onsite and to achieve a balance of recreational activities, interpretive opportunities, and protection of cultural and natural resources. Furthermore, these actions would serve to designate park uses (i.e. recreational, educational, and interpretive activities) geographically throughout the park.

The ball field near the existing Picnic Pavilion A, on the parade ground, would be maintained for recreation. The ball fields associated with Picnic Pavilions B and D would be removed to make way for interpretive and educational experiences.

A dedicated bicycle/pedestrian trail would parallel the northern portion of the existing loop road from east of Parking Area A to Parking Area B. The trail would then continue behind the park police station and paddocks to connect to the existing southern portion of the existing loop road, which would exclude vehicular traffic. The roadway width would be reduced by fifty percent to minimize impervious surfaces and to provide a natural experience along the trail. The area where asphalt is removed would be planted with native vegetation or appropriate vegetation treatment.

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

Treatments of historic structures and cultural landscapes are described in Elements Common to Action Alternatives.

Presented in Table 1 is a comparison of the elements of each Action Alternative.

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Table 1. Comparison of the Action Alternatives

Park Facility	No-Action Alternative	Alternative B	Alternative C Preferred Alternative	Alternative D
Vehicular Circulation and Parking	<ul style="list-style-type: none"> • One vehicular entrance, would remain at current alignment • Roadway forms a loop following perimeter of park • Paved road at south of park closed to vehicular traffic • Parking provided at five lots, near picnic pavilions and areas 	<ul style="list-style-type: none"> • Entrance road realigned • Two-way traffic to Parking Area B • One-way traffic counter-clockwise to park entrance/exit • Loop road between Picnic Areas D and E removed • Parking Areas D and E removed • A net removal of 4,300 square feet of pavement 	<ul style="list-style-type: none"> • Entrance road realigned • Two-way road to turnaround at Parking Area C • Loop road between Picnic Areas D and E removed • Parking Areas D and E removed • A net removal of 56,700 square feet of pavement 	<ul style="list-style-type: none"> • Entrance road realigned • Two-way road to Parking Area B traffic circle, one-way continues past Parking Area C and back to Parking Area B traffic circle • Loop road between Picnic Areas D and E removed • Parking Areas D and E removed • A net removal of 5,500 square feet of pavement
Interpretive Facilities	<ul style="list-style-type: none"> • Visitors can explore exteriors of former gun batteries and Battery Commander's Station • Eight wayside exhibits interpret various aspects of site's history 	<ul style="list-style-type: none"> • Visitor facility constructed at the site of Picnic Pavilion B • Interpretive Trail originates at the visitor facility 	<ul style="list-style-type: none"> • Visitor facility constructed at the site of Picnic Pavilion/ Area C • Interpretive Trail originates at the visitor facility 	<ul style="list-style-type: none"> • Visitor facility constructed at the site of Picnic Pavilion B • Interpretive Trail originates at the visitor facility

Park Facility	No-Action Alternative	Alternative B	Alternative C Preferred Alternative	Alternative D
Recreational Facilities	<ul style="list-style-type: none"> Recreational facilities managed and maintained as they are today Picnic Pavilions/Areas A, B, C, and D available by reservation and Picnic Area E available on a first come basis Ball fields, volleyball court, and playground would continue to be maintained Bicycle/Pedestrian Trail as a shared lane provided on the loop road 	<ul style="list-style-type: none"> Picnic Pavilions/Areas B, C, D and E removed Picnic Area E restroom removed Ball fields adjacent to Picnic Pavilions B and D removed Ball field in Area A improved Bicycle/Pedestrian Trail as a shared lane provided on the loop road 	<ul style="list-style-type: none"> Picnic Pavilions/Areas B, C, D, and E removed Picnic Area E restroom removed Ball field adjacent to Picnic Pavilion D removed Ball field in Area A improved Parallels new the loop road from park entrance to south of visitor facility, then follows existing road alignment as trail only 	<ul style="list-style-type: none"> Picnic Pavilions/Areas A, B, D and E removed Picnic Area E restroom removed Ball fields adjacent to Picnic Pavilions B and D removed Ball field in Area A improved Parallels new the loop road from park entrance to south of visitor facility, then follows existing road alignment as trail only
Historic Structures and Cultural Landscapes	<ul style="list-style-type: none"> The gun batteries, Battery Commander's Station, and NCO Quarters would continue to be maintained by the park. Cultural landscape features such as the row trees and CCC Pond would not be impacted 	<ul style="list-style-type: none"> Brick Storage Building and trails would continue to be maintained. Cultural landscape features such as the row trees and CCC Pond would not be impacted 	<ul style="list-style-type: none"> Brick Storage Building and trails would continue to be maintained. Cultural landscape features such as the row trees and CCC Pond would not be impacted 	<ul style="list-style-type: none"> Brick Storage Building and trails, and pond would continue to be maintained. Cultural landscape features such as the row trees and CCC Pond would not be impacted

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2 Items in **bold** are elements common to all action alternatives.

CONSTRUCTION AND STAGING

Construction equipment and materials would be staged at the existing maintenance facility. This area was chosen in order to least impact park operations and visitor use and experience for the duration of construction activities.

MITIGATION MEASURES OF THE ACTION ALTERNATIVES AND OPTIONS

The NPS places a strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following protective measures would be implemented as part of the selected Action Alternative. The NPS would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results.

Soils

It is NPS practice to comply with or exceed local and state water quality and erosion and sediment control regulations. During the design phase of the project, erosion and sediment control plans would be prepared in accordance with the appropriate state and county Erosion and Sediment Control requirements. These plans would include specific measures and BMPs to avoid and/or minimize soil erosion and transport due to ground-disturbing activities such as grading. Such measures may include, but would not be limited to, stabilized construction entrances, silt fences, temporary sediment traps and filtering devices and earth dikes. These plans would be implemented during construction. The erosion and sediment control plans are common to all alternatives and would be implemented with the proposed action.

Vegetation

Protection measures and BMPs would be implemented to avoid impacts to all types of park vegetation to the extent possible. Vegetation protection measures would be detailed in the design phase of the project and may include, but would not be limited to: evaluation of large trees and development of a Tree Preservation Plan by an arborist or licensed tree expert; installation of tree protection fencing, root pruning for trees whose critical root zones (CRZs) lie within a proposed construction area; and staging construction equipment to avoid damage to park vegetation. All vegetation planting and seeding would fulfill NPS functional and aesthetic requirements. Areas planted following construction would be monitored to ensure successful establishment. Protection measures and BMPs are common to all alternatives and would be implemented with the proposed action. The loss of trees over 6 inches diameter at breast height (DBH) will be mitigated on site.

Wildlife

Best management practices would be utilized to minimize impacts to terrestrial and aquatic habitats. Detailed tree save plans would be developed and implemented during construction to protect surrounding trees that form forest habitat for park wildlife. Erosion and sediment control plans would also be prepared and implemented to avoid and minimize potential impacts to aquatic habitat that could be caused by soil erosion and sediment transport. Tree save plans and erosion and sediment control plans are common to all alternatives and would be implemented with the proposed action.

All construction activities would comply with the Bald and Golden Eagle Protection Act. This Act requires that a buffer of 330 feet (100 meters) be maintained between activities and the bald eagle nest. All clearing, external construction, and landscaping activities within 660 feet (200 meters) of the nest would be conducted outside the nesting season (from August through January). Established landscape buffers would be maintained to screen the activity from the nest. Compliance with the Bald and Golden Eagle Protection Act is common to all alternatives and would be implemented with the proposed action.

Archeology

Each individual project identified in the SDP (such as the visitor facility including utilities, trails, road reconfiguration, etc.) would be evaluated for potential impacts to archeological resources once more detailed design information is available with regard to the location and size of each facility. The NPS would continue coordination with the VDHR, SHPO, and the Fairfax County Parks Department in accordance with Section 106 of the NHPA, as amended. The goal of consultation and identification is to avoid, minimize, or mitigate any potential effects to archeological resources. These actions are common to all alternatives and would be implemented with the proposed action.

Historic Structures and Districts / Cultural Landscapes

The design of the visitor facility and other facilities outlined in the SDP would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* in order to avoid and/or minimize any adverse effects. Their design would be appropriate for the park context. All contributing landscape features would be avoided to the extent feasible in constructing the trail system and the historic open spaces, including the parade ground, would be maintained. The NPS would continue coordination with the VDHR in accordance with Section 106 of the NHPA, as amended. These measures are common to all alternatives and would be implemented with the proposed action.

Cultural Landscapes

Plans for construction staging of equipment and materials would be developed in order to least impact views within the cultural landscape. Landscape plans would be developed considering the cultural landscape, and in accordance with NPS policies. These actions are common to all alternatives and would be implemented with the proposed action.

Visitor Use and Experience

Signage would be used to notify park visitors of temporary closures or changes in traffic patterns. Additionally, plans for construction equipment and materials staging areas would be developed to cause the least disruption to park visitors. These actions are common to all alternatives and would be implemented with the proposed action.

ALTERNATIVES AND OPTIONS CONSIDERED BUT DISMISSED

Several alternatives or alternative elements were identified during the design process and internal and public scoping. Some of these were determined to be unreasonable, or much less desirable than similar options included in the analysis, and were therefore not carried forward for analysis in this EA/AoE. Justification for eliminating alternatives from further analysis was based on factors relating to:

- Conflicts with already-established park uses

- Duplication with other less environmentally damaging alternatives
- Conflict with the statement of purpose and need, or other policy
- Severe impact on environmental or historic resources

MAINTENANCE FACILITY

Relocate Maintenance Facility outside of Park

This alternative would move the maintenance facility outside the park either to the south or north of Alexandria, VA. The NPS maintains the Parkway and utilizes this maintenance facility to store the vehicles and salt necessary to clear the Parkway during snowstorms. The NPS also uses this facility to maintain Fort Hunt Park. This alternative was dismissed as the park determined that keeping the maintenance operations south of Alexandria, VA was critical during snow storms as the snow plows need to be able to clear and maintain the roads during inclement weather. During later discussions it also became evident that the park maintenance staff preferred to have the maintenance inside the park for the purpose of maintaining the grounds at Fort Hunt.

Relocate Maintenance Facility to Southwest Corner of Fort Hunt Park

This alternative would move the maintenance facility to an area in the southwest corner of Fort Hunt Park with access from River Farm Drive. This alternative was not retained because of natural resources impacts and concerns that park operations such as snow removal activities would have on adjacent residential properties.

Co-locate the Maintenance Facility with the Park Police

This alternative would move the maintenance facility adjacent to the park police facility and they would have a shared access drive. This alternative was dismissed as the park determined that the area north of the police facility had archeological significance and the placement of the facility in this location would potentially impact historic resources.

VISITOR FACILITY

Locate the Visitor Facility South of the Picnic Area E

This alternative proposed a visitor facility below picnic Area E. The visitor facility located in this area was evaluated and it was dismissed because providing a visitor facility and its associated parking in this location would significantly impact Fort Hunt Park's natural resources.

Located the Visitor Facility near Park Entrance

This alternative proposed a visitor facility near the park entrance. The visitor facility in this area was evaluated and dismissed because a visitor facility and its associated parking would be located in close proximity to historic resources. Also, the visitor facility would be close to the maintenance facility and maintenance operations; thus the other sites were deemed to better meet the purpose and need for the project.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is defined by the CEQ as the alternative that would promote the national environmental policy as expressed in NEPA Section 101. This includes:

1. Fulfilling the responsibilities of each generation as trustee of the environment for succeeding generations;
2. Assuring for all generations safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. Attaining the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
4. Preserving important historic, cultural and natural aspects of our national heritage and maintaining, wherever possible, an environment that supports diversity and variety of individual choice;
5. Achieving a balance between population and resource use that would permit high standards of living and a wide sharing of life's amenities; and
6. Enhancing the quality of renewable resources and approaching the maximum attainable recycling of depletable resources (NEPA, Section 101).

The NPS is required to identify the environmentally preferable alternative in its NEPA documents for public review and comment. The NPS, in accordance with the Department of the Interior policies contained in the Departmental Manual (516 DM 4.10) and the CEQ's *NEPA's Forty Most Asked Questions*, defines the environmentally preferable alternative (or alternatives) as the alternative that best promotes the national environmental policy expressed in NEPA (Section 101(b) (516 DM 4.10). In their *Forty Most Asked Questions*, CEQ further clarifies the identification of the environmentally preferable alternative, stating "Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (Q6a).

Based on the analysis described in the environmental consequences section of this EA/AoE, the NPS has determined that Alternative C is the environmentally preferable alternative.

Alternative C best balances resource protection while achieving the desired visitor experience by managing park use and providing facilities to help the NPS to carry out its mission. Alternative C positions the visitor facility in a more desirable location for interpretation and the circulation pattern changes offer the greatest benefit for resource protection and visitor experience when compared to Alternatives B and D. Alternative C best fulfills the NPS responsibility as trustee of the environment for succeeding generations (1) because the plan identifies future infrastructure needs and resource protection to enhance Fort Hunt Park. For instance, when compared to Alternatives B and D, Alternative C removes the greatest amount of existing road to reduce the impervious surface in the park while enhancing the visitor experience.

The addition of the visitor facility in combination with the reduction of permitted picnicking in certain areas of the park allows the NPS to attain the widest range of beneficial uses (3). Picnicking would still be accommodated; however, the environmentally preferred alternative balances this use with other types of recreational uses at the park as well as resource protection. Furthermore, Alternative C preserves important historic, cultural, and natural aspects of our national heritage and supports diversity and variety of choice (4). Alternative C provides for future infrastructure and resource protection to enhance Fort Hunt Park and allow the NPS to better tell the story of the site's rich history. When compared to Alternatives B and D, Alternative C offers the best separation of uses because the visitor facility would be located in Picnic Area C, while the primary area for permitted recreational use would be in Picnic Pavilion A.

Alternative C achieves a balance between population and resource use that promotes a high standard of living and a wide sharing of life's amenities (5). Again, Alternative C seeks a balance between visitor uses (including

permitted picnicking with other recreational use such as walking, biking, site seeing, use of ball fields, etc.) and focuses recreational uses in areas compatible to them while minimizing the effects on other visitors who may be using the park for different reasons. When compared to Alternatives B and D, converting part of the loop road to a bicycle/pedestrian trail and maintaining the highly used Picnic Pavilion A (option under Alternative D) are examples where Alternative C provides the best balance between uses and promotes a high standard of living.

When compared to Alternatives B and D, Alternative C best meets the national environmental policy as expressed in NEPA Section 101 for the reasons described above; thus, Alternative C is the environmentally preferable alternative.

How the Alternatives Meet the Objectives

The project objectives as described in Chapter 1 must be achieved to a large degree for the action to be considered a success. The alternatives considered in detail need to meet the project's purpose of and need for the action as well as meet the project objectives either partially or fully. This information in combination with the assessment of resource impacts is used by the NPS in its selection of a preferred alternative.

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Table 2. How the Alternatives Meet the Project Objectives

Objective	Alternative A: No Action Alternative	Alternatives B	Alternative C (Preferred Alternative)	Alternative D
Enhance the visitor experience	Does not meet this objective <ul style="list-style-type: none"> ▪ A new visitor facility and new interpretive trail system would not be constructed to the enhance visitor experience. 	Fully meets this objective. <ul style="list-style-type: none"> ▪ Construction of a new visitor facility and new interpretive trail system common to all Action Alternatives would enhance the visitor experiences. ▪ Removal of Picnic Pavilions B, C, D, and E would reduce impacts on other types of visitor use. ▪ Change in circulation from road traffic and reduction in motorist conflicts with pedestrian/bicyclists would enhance the visitor experience. ▪ Addition of the separate pedestrian/bike lane would enhance visitor experience. ▪ Additional wayfindings and signage would help to enhance the visitor experience by providing additional information on the park’s layout and resources available to the public. 	Fully meets this objective. <ul style="list-style-type: none"> ▪ Construction of a new visitor facility and new interpretive trail system common to all Action Alternatives would enhance the visitor experiences. ▪ Removal of Picnic Pavilions B, C, D, and E would reduce impacts on other types of visitor use. ▪ Change in circulation from road traffic and reduction in motorist conflicts with pedestrian/bicyclists would enhance the visitor experience. ▪ Addition of the separate pedestrian/bicycle lane and dedicated trail would enhance visitor experience. ▪ Additional wayfindings and signage would help to enhance the visitor experience by providing additional information on the park’s layout and resources available to the public. 	Fully meets this objective. <ul style="list-style-type: none"> ▪ Construction of a new visitor facility and new interpretive trail system common to all Action Alternatives would enhance the visitor experiences. ▪ Removal of Picnic Pavilions A, B, D, and E would reduce impacts on other types of visitor use. ▪ Change in circulation from road traffic and reduction in motorist conflicts with pedestrian/bicyclists would enhance the visitor experience. ▪ Addition of the separate pedestrian/bicycle lane and dedicated trail would enhance visitor experience. ▪ Additional wayfindings and signage would help to enhance the visitor experience by providing additional information on the park’s layout and resources available to the public.
Manage visitor use	Does not meet this objective <ul style="list-style-type: none"> ▪ NPS would not reduce the level of permitted picnicking. The visitor 	Fully meets this objective. <ul style="list-style-type: none"> ▪ Reduction in picnic pavilions would help NPS to manage peak periods of 	Fully meets this objective. <ul style="list-style-type: none"> ▪ Reduction in picnic pavilions would help NPS to manage peak periods of 	Fully meets this objective. <ul style="list-style-type: none"> ▪ Reduction in picnic pavilions would help NPS to manage peak periods of

Objective	Alternative A: No Action Alternative	Alternatives B	Alternative C (Preferred Alternative)	Alternative D
	<p>experience would continue to be impacted during peak visitation periods because of insufficient facilities and compatible space to accommodate that use while providing for resource protection and other visitor uses.</p>	<p>visitor use.</p> <ul style="list-style-type: none"> ▪ Change in circulation from road traffic would better manage use of the park. ▪ Additional wayfindings and signage would help to manage use. 	<p>visitor use.</p> <ul style="list-style-type: none"> ▪ Change in circulation from road traffic would better manage use of the park. ▪ Additional wayfindings and signage would help to manage use. 	<p>visitor use.</p> <ul style="list-style-type: none"> ▪ Change in circulation from road traffic would better manage use of the park. ▪ Additional wayfindings and signage would help to manage use.
<p>Protect cultural and natural resources</p>	<p>Does not meet this objective</p> <ul style="list-style-type: none"> ▪ The No Action Alternative does not balance cultural and natural resource protection with visitor use (especially peak period for large permitted picnicking events). 	<p>Fully meets this objective.</p> <ul style="list-style-type: none"> ▪ The visitor facility and trails have been located in such a manner to help protect park resources while allowing for enhanced interpretation of the site’s history. ▪ Removal of Picnic Pavilions B, C, D, and E would help to protect existing resources. ▪ The future undetermined treatment of the NCO Quarters meets this objective. ▪ The preservation of certain site features such as the Brick Storage Building, trails, and pond help to protect the cultural resources. 	<p>Fully meets this objective.</p> <ul style="list-style-type: none"> ▪ The visitor facility and trails have been located in such a manner to help protect park resources while allowing for enhanced interpretation of the site’s history. ▪ Removal of Picnic Pavilions B, C, D, and E would help to protect existing resources. ▪ The future undetermined treatment of the NCO Quarters meets this objective. ▪ The preservation of certain site features such as the Brick Storage Building, trails, and pond help to protect the cultural resources. 	<p>Fully meets this objective.</p> <ul style="list-style-type: none"> ▪ The visitor facility and trails have been located in such a manner to help protect park resources while allowing for enhanced interpretation of the site’s history. ▪ Removal of Picnic Pavilions A, B, D, and E would help to protect existing resources. ▪ The future undetermined treatment of the NCO Quarters meets this objective. ▪ The preservation of certain site features such as the Brick Storage Building, trails, and pond help to protect the cultural resources.
<p>Determine infrastructure and facilities needs</p>	<p>Does not meet this objective</p> <ul style="list-style-type: none"> ▪ Infrastructure and facility needs are not identified or meet under this alternative. 	<p>Fully meets this objective.</p> <ul style="list-style-type: none"> ▪ The Action Alternatives identify and accommodate infrastructure and facility needs for visitor facilities. 	<p>Fully meets this objective.</p> <ul style="list-style-type: none"> ▪ The Action Alternatives identify and accommodate infrastructure and facility needs for visitor facilities. 	<p>Fully meets this objective.</p> <ul style="list-style-type: none"> ▪ The Action Alternatives identify and accommodate infrastructure and facility needs for visitor facilities.

Objective	Alternative A: No Action Alternative	Alternatives B	Alternative C (Preferred Alternative)	Alternative D
Enhance the cultural landscape and viewsheds	Does not meet this objective <ul style="list-style-type: none"> ▪ The cultural landscape and viewsheds would not be enhanced under the No Action Alternative. 	Partially meets this objective. <ul style="list-style-type: none"> ▪ The preservation of certain site features such as the Brick Storage Building, trails and pond help to protect the cultural resources. Also, the rows of allee trees would remain intact. 	Partially meets this objective. <ul style="list-style-type: none"> ▪ The preservation of certain site features such as the Brick Storage Building, trails and pond help to protect the cultural resources. Also, the rows of allee trees would remain intact. 	Partially meets this objective. <ul style="list-style-type: none"> ▪ The preservation of certain site features such as the Brick Storage Building, trails and pond help to protect the cultural resources. Also, the rows of allee trees would remain intact.

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1 **SUMMARY OF IMPACTS**

2 A summary of the environmental consequences of each alternative and option is presented in Table 3.

3 **Table 3. Summary of Environmental Consequences**

Impacted Resource	Alternative A No Action	Alternative B	Alternative C (Preferred Alternative)	Alternative D
Soils	Long-term minor adverse impacts to soils from existing drainage issues and soil erosion and compaction. A minor contribution to the long-term minor adverse cumulative impact would result.	Short-term minor adverse impacts from soil erosion and impacts to undisturbed soils. Long-term minor adverse impacts to soils from soil loss and increase in imperviousness (3.0 acres) from new infrastructure. Beneficial impacts to soils because of removal of imperviousness (1.6 acres), the remediation of current drainage issues, and reduction of soil compaction due to social trailing. A very minor contribution to the long-term minor adverse cumulative impact would result.	Short-term minor adverse impacts from soil erosion and impacts to undisturbed soils. Long-term minor adverse impacts to soils from soil loss and increase in imperviousness (3.5 acres) from new infrastructure. Beneficial impacts to soils because of removal of imperviousness (2.3 acres), the remediation of current drainage issues, and reduction of soil compaction due to social trailing. A very minor contribution to the long-term minor adverse cumulative impact would result.	Short-term minor adverse impacts from soil erosion and impacts to undisturbed soils. Long-term minor adverse impacts to soils from soil loss and increase in imperviousness (2.2 acres) from new infrastructure. Beneficial impacts to soils because of removal of imperviousness (2.4 acres), the remediation of current drainage issues, and reduction of soil compaction due to social trailing. A very minor contribution to the long-term minor adverse cumulative impact would result.
Vegetation	No impact. No cumulative impact.	Long-term negligible adverse impacts from construction activities. Impacts to vegetation would be limited to individual native plants and relatively minor portions of native populations. A very minor contribution to the long-term minor adverse cumulative impact would result.	Long-term minor adverse impacts from construction activities. Impacts to vegetation would be limited to individual native plants and relatively minor portions of native populations. A very minor contribution to the long-term minor adverse cumulative impact would result.	Long-term minor adverse impacts from construction activities. Impacts to vegetation would be limited to individual native plants and relatively minor portions of native populations. A very minor contribution to the long-term minor adverse cumulative impact would result.
Wildlife	No impact. No cumulative impact.	Short-term minor adverse impacts to wildlife during construction activities.	Short-term minor adverse impacts to wildlife during construction activities.	Short-term minor adverse impacts to wildlife during construction activities.

Impacted Resource	Alternative A No Action	Alternative B	Alternative C (Preferred Alternative)	Alternative D
		Beneficial impacts would result from the creation of open spaces and removal of existing park structures. A very minor contribution to the short and long-term minor adverse cumulative impacts.	Beneficial impacts would result from the creation of open spaces and removal of existing park structures, as well as vehicle access restrictions. A very minor contribution to the short and long-term minor adverse cumulative impacts would result.	Beneficial impacts would result from the creation of open spaces and removal of existing park structures, as well as vehicle access restrictions. A very minor contribution to the short and long-term minor adverse cumulative impacts would result.
Historic Structures	No impact. No cumulative impact.	Beneficial impacts would result from the future undetermined treatment of the NCO Quarters. . A minor contribution to the long-term minor adverse cumulative impact.	Beneficial impacts would result from the future undetermined treatment of the NCO Quarters. . A minor contribution to the long-term minor adverse cumulative impact.	Beneficial impacts would result from the future undetermined treatment of the NCO Quarters. . A minor contribution to the long-term minor adverse cumulative impact.
Cultural Landscapes	Long-term minor adverse impacts because extant resources would continue to deteriorate. Minor contribution to the long-term minor adverse cumulative impact.	Long-term minor adverse impacts due to the impact to viewsheds by the construction of the proposed visitor facility. A minor contribution to the long-term minor adverse cumulative impact.	Long-term minor adverse impacts due to the impact to viewsheds by the construction of the proposed visitor facility. A minor contribution to the long-term minor adverse cumulative impact.	Long-term minor adverse impacts due to the impact to viewsheds by the construction of the proposed visitor facility. A minor contribution to the long-term minor adverse cumulative impact.
Archeological Resources	Long-term minor adverse impacts due to exposed resources. A very minor contribution to the long-term minor adverse cumulative impact.	Minor to moderate long-term adverse impacts would occur due to the construction activity associated with Alternative B. Impacts to archeological sites would be avoided, minimized, or mitigated to the extent feasible. A minor contribution to the long-term minor adverse cumulative impact would result.	Minor to moderate long-term adverse impacts would occur due to the construction activity associated with the Alternative C. Impacts to archeological sites would be avoided, minimized, or mitigated to the extent feasible. A minor contribution to the long-term minor adverse cumulative impact would result.	Minor to moderate long-term adverse impacts would occur due to the construction activity associated with the Alternative D. Impacts to archeological sites would be avoided, minimized, or mitigated to the extent feasible. A minor contribution to the long-term minor adverse cumulative impact would result.
Visitor Use and Experience	Long-term minor adverse impacts because park resources would continue to be overwhelmed during peak visitor use and	Short-term moderate adverse impacts during construction because of noise and disturbance. Long-term moderate, beneficial impact to	Short-term moderate adverse impacts during construction because of noise and disturbance. Long-term moderate, beneficial impact to	Short-term moderate adverse impacts during construction because of noise and disturbance. Long-term moderate, beneficial impact to visitor use and quality

Impacted Resource	Alternative A No Action	Alternative B	Alternative C (Preferred Alternative)	Alternative D
	interpretive resources would remain inadequate for interpreting the full history of Fort Hunt Park. No cumulative impact.	visitor use and quality of the visitor experience from new visitor facility, interpretive trails, and other site improvements. No cumulative impact.	visitor use and quality of the visitor experience from new visitor facility, interpretive trails, and other site improvements. No cumulative impact.	of the visitor experience from new visitor facility, interpretive trails, and other site improvements. No cumulative impact.
Park Operations and Management	Long-term minor adverse impacts due to the overuse of park facilities and increased need for park police during times of peak visitation. No cumulative impact.	Short-term moderate adverse impacts during construction. Long-term minor adverse impact from the one-way vehicular circulation pattern and additional staff needed to operate the visitor facility. Beneficial impact because of the reduction in permitted picnics. No cumulative impact.	Short-term moderate adverse impacts during construction. Beneficial impact because of the reduction in permitted picnics. No cumulative impact.	Short-term moderate adverse impacts during construction. Long-term minor adverse impact from the one-way vehicular circulation pattern and additional staff needed to operate the visitor facility. Beneficial impact because of the reduction in permitted picnics. No cumulative impact.

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CHAPTER 3: AFFECTED ENVIRONMENT

This “Affected Environment” chapter of the EA/AoE describes existing environmental conditions in the proposed project area. These conditions serve as a baseline for understanding the resources that could be impacted by implementation of the proposed action. The resource topics presented in this chapter, and the organization of these topics, correspond to the resources discussions discussed in “Chapter 4: Environmental Consequences.”

SOILS

NPS management policy with regard to soils is to “actively seek to understand and preserve the soil resources of parks, and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil or its contamination of other resources” (NPS 2006). To enact this policy, the NPS utilizes soil survey data from the NRCS. Sixteen soil map units are identified by the NRCS within Fort Hunt Park.

The project area is located in the coastal plain physiographic province. The coastal plain province consists of unconsolidated sand, silt, clay, and gravel strata deposited by ancient oceans and freshwater rivers. The overall drainage is to the southeast. Elevations at Fort Hunt Park range from mean sea level (MSL) to approximately 50 feet above MSL.

Soils at Fort Hunt Park include upland soils, hydric soils, and alluvial/floodplain soils. Existing features such as picnic shelters, ball fields, and other historic structures are generally located in area of upland soils. Alluvial/floodplain related soils exist closer to the Potomac River and a small tributary in the south-east part of the project area.

Hydric soils exist at the site. Among the properties of the soils, hydric rating is used in land use planning, conservation planning, and assessment of potential wildlife habitat. Hydric soils are a key component of wetlands (see Section 3.3), which are regulated by federal government agencies. The NRCS has defined hydric soils as those soils that are sufficiently wet in the upper portions to develop anaerobic conditions during the growing season (USDA NRCS n.d.b). A national list of hydric soils is maintained by the NRCS. In addition to soils classified as hydric, the list also includes soils which are not hydric but contain hydric inclusions.

Portions of the site have been graded to accommodate previous and existing uses. Some soils have been compacted by the creation of social trails throughout the park. Otherwise, high use areas and slopes within the study area show areas of limited erosion, particularly in areas lacking woody riparian vegetation.

VEGETATION

A review of existing park vegetation took place during a site visit by the NPS consultant team on January 24, 2011. Vegetative communities at Fort Hunt Park are a result of past and present land uses and topographic setting. The interior and northern portions of the park consist of lawns and shade trees which are maintained for the recreational use of the park. Among the shade trees are mature pin oaks (*Quercus palustris*), tulip poplars (*Liriodendron tulipifera*), and red maples (*Acer rubrum*). Trails and roadways in the maintained portions of Fort Hunt Park are bordered by recent plantings of red maples.

Along the George Washington Memorial Parkway and extending inward to the park's landscaped areas, there are deciduous forest stands and disturbed areas. In the south and west portions of Fort Hunt Park, mid-successional deciduous forest resources were observed, consisting of mature pin oaks, red oaks (*Quercus falcata*) and sycamores (*Platanus occidentalis*). The forest understory includes an abundance of American holly (*Ilex opaca*) along with invasive species such as Japanese honeysuckle (*Lonicera japonica*), multiflora rose (*Rosa multiflora*), English ivy (*Hedera helix*), and wintercreeper (*Euonymus fortunei*).

Early-successional disturbed areas occur in the southeast and east portions of the park. These are areas which were once maintained, but have since been overgrown by weeds and woody vines. In general, the areas lie on the hillsides in front of the four gun batteries. Common plant species within this area include multiflora rose and Japanese honeysuckle. Scattered dead trees occur in these areas, which appear to have been overgrown with vines. A few large trees were interspersed in the disturbed areas.

WILDLIFE AND ITS HABITAT

Wildlife habitat within Fort Hunt Park is typically comprised of mid-successional forest and forest edges. These habitats are common throughout the region and include mostly deciduous trees and an array of birds, mammals, insects, etc. Species that are expected to be present within the study area include white-tailed deer (*Odocoileus virginianus*), northern gray squirrel (*Sciurus carolinensis*), eastern chipmunk (*Tamias striatus*), eastern cottontail (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), American robin (*Turdus migratorius*), American crow (*Corvus brachyrhynchos*), European starling (*Sturnus vulgaris*), mourning dove (*Zenaidura macroura*), red-eyed vireo (*Vireo olivaceus*), wood thrush (*Hylocichla ustulata*), pileated woodpecker (*Dryocopus pileatus*), house sparrow (*Passer domesticus*), northern cardinal (*Cardinalis cardinalis*), eastern bluebird (*Sialia sialis*), and various species of small rodents (NPS 2008b).

Forested wetlands are in the southern portions of Fort Hunt Park. Wetland habitat is critical to the survival and life cycle of many wildlife species. Wetlands provide unique values to wildlife such as bird nesting sites, fish spawning grounds, resting stopover sites for migratory birds, and shelters for prey animals. Potential wetland species within the study area include crayfish (*Cambarus spp.*), green frog (*Rana clamitans*), American toad (*Bufo americanus*), box turtle (*Terrapene carolina*), muskrat (*Ondatra zibethicus*), and beaver (*Castor canadensis*). Fort Hunt is also utilized as a stopover location for migratory forest birds. Migratory species observed at Fort Hunt include the scarlet tanager (*Piranga olivacea*), black-throated blue warbler (*Dendroica caerulescens*), yellow-rumped warbler (*Dendroica coronata*), Acadian flycatcher (*Empidonax vireescens*), and red-eyed vireo (*Vireo olivaceus*).

Knowledge of a bald eagle (*Haliaeetus leucocephalus*) nest on site is confirmed by GWMP natural resource managers. In 1973, the species was declared in danger of extinction by the USFWS under the Endangered Species Act (ESA) (USFWS 2010a). Since then, environmental protection measures (such as the ban on DDT) have resulted in a recovery of the bald eagle population. In 1995, the USFWS reclassified the species from endangered to threatened, and in 2007, the species was officially removed from the Federal Endangered Species List.

Wildlife preservation law still applies to the bald eagle, in the form of the Bald and Golden Eagle Protection Act (USFWS 2010b). Under this Act, the taking, possession, and commerce of bald and golden eagles are prohibited except under certain specified conditions. Additionally, bald eagles are among 836 avian species protected by the Migratory Bird Treaty Act of 1918 (USFWS 2010b). This Act affirms that the taking, killing,

or possession of migratory birds is unlawful. The USFWS is responsible for implementing the policies of these Acts.

The USFWS has established protective buffer zones around the eagle nest in which certain activities are prohibited. Zone 1 is defined as the area from 0 feet to 330 feet of the nest. No activity is permitted within Zone 1 during the period between November and June, and no tree cutting, land clearing, building, road or trail construction is permitted at any time. Zone 2 is defined as the area from 330 feet to 660 feet from the nest. No human activity is allowed from November through June, and only minimal activity is permitted during the period from July through October. As with Zone 1, no tree cutting, land clearing, building, road or trail construction is permitted at any time within Zone 2. No tree falling, land clearing, or construction activity is permitted from November through June.

According to correspondence received from the VDCR, dated December 10, 2010, the bald eagle is listed as threatened by the Commonwealth of Virginia. VDCR recommends coordination with the Virginia Department of Game and Inland Fisheries (VDGIF) if bald eagle nests are identified within 0.25 miles of the project area.

To avoid disturbing nesting bald eagles, the USFWS recommends keeping a distance between the activity and the nest (distance buffers), maintaining forested areas between the activity and around nest trees, and avoiding certain activities during the breeding season. The recommendations include maintaining a 660 foot protective buffer if the activity is visible from the nest, or a 330 foot protective buffer if the activity is not visible from the nest, provided that clearing, external construction, and landscaping within 660 feet of the nest is done outside of the breeding season (USFWS 2007).

The Virginia Field Office of the USFWS, in conjunction with the VDGIF, provides the following recommendations in the *Bald Eagle Protection Guidelines for Virginia* (USFWS 2000):

Primary Management Zone - defined as the area 750 feet in radius around an occupied nest. The precise size of this zone should depend on site conditions and the individual eagles' tolerance for human activity. The following activities within this zone should not occur at any time:

- land clearing, clear cutting, mining, and other habitat modification activities;
- development of residential, recreational, agricultural, commercial, or industrial structures, power lines, roads, trails, or any other construction activity;
- use of chemicals toxic to wildlife, such as pesticides and herbicides.

The following activities should not occur during the breeding/nesting season (December 15 - July 15), unless the nest is determined to be unoccupied in a particular year:

- maintenance of existing buildings and roads;
- use of motorized vehicles and heavy equipment;
- aircraft flyovers within 1000 vertical feet of the ground;
- human entry and activities, including recreation, such as hiking, camping, picnicking, hunting, fishing, boating, jet skiing, etc.;
- loud noise generating activities, including blasting.

Limited selective timber harvest to within 300 feet of the nest tree, after consultation with the VDGIF/USFWS biologists, may be possible *outside* the breeding/nesting season, if a forest canopy is maintained.

Secondary Management Zone – This is defined as the area from 750 feet to 1,320 feet in radius around an occupied nest. The precise size of this zone should depend on site conditions and the individual eagles’ tolerance for human activity. Restrictions in this zone are necessary to minimize disturbance that could compromise eagle use of the nest. Most activities within this zone should be restricted during the breeding/nesting season, and allowable activities should be determined by VDGIF/USFWS on a case-by-case basis. Development and vegetation clearing should be minimized and line-of-sight vegetation buffers to the nest should be maintained. The following activities within this zone should generally not occur at any time:

- development of multi-story buildings; high density housing (construction of single story, low density residential houses may be acceptable); large commercial, industrial, or agricultural facilities; high traffic roads; and facilities that would generate loud noise;
- use of chemicals toxic to wildlife, such as pesticides and herbicides.

The following activities should not occur during the breeding/nesting season (December 15 - July 15), unless the nest is determined to be unoccupied in a particular year:

- aircraft flyovers within 1000 vertical feet of the ground;
- construction activities;
- recreational activities that generate loud noise, such as motorized boats, jet skis, etc.;
- other loud noise generating activities, including blasting.

Outside of the breeding/nesting season, most other activities can be conducted within the secondary management zone as determined on a case-by-case basis by VDGIF/USFWS.

CULTURAL RESOURCES

GUIDING REGULATIONS AND POLICIES

The NHPA governs federal agencies in their handling of historic properties. Section 106 of the Act requires that federal agencies take into account the effects of their actions on cultural resources. Under this provision, the NPS must evaluate impacts to any district, site, building, structure, or object listed in or eligible for listing in the NRHP. Cultural resources are characterized as archeological resources, historic structures, and cultural landscapes. “Historic properties” as defined by the implementing regulations of the NHPA (36 CFR 800), are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. This term includes artifacts, records, and the remains that are related to and located within such properties, as well as traditional and culturally significant Native American sites and historic landscapes. The term “eligible for inclusion in the National Register” includes both properties formally determined eligible and all other properties that meet National Register listing criteria. Agencies must consult with the SHPO and the ACHP as required, and other interested parties in an effort to avoid, minimize, or mitigate adverse effects.

In addition to the NHPA, protection and management of cultural resources held by the NPS is governed by *Directors Order #28: Cultural Resources Management Guidelines* (NPS 1988), NPS Management Policies (2006), and the 2008 NPS-wide Programmatic Agreement with the ACHP and the National Conference of State Historic Preservation Officers. These documents require that NPS managers avoid or minimize adverse impacts on park resources to the greatest extent possible.

The significance of historic properties is generally judged against a property's ability to meet at least one of the following four criteria for inclusion on the National Register of Historic Places (36 CFR 60):

- A. association with events that have made a noteworthy contribution to the broad patterns of our history; or
- B. association with the lives of persons important in our past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent an important and distinguishable entity whose components may lack individual distinction; or
- D. that has yielded, or may be likely to yield, information important in prehistory or history.

Properties may be eligible for the National Register for contributions at the national, state, or local level. Ordinarily, properties achieving significance within the last 50 years are not considered eligible unless they are parts of historic districts or unless they are of exceptional importance. The most common types of properties less than 50 years old listed on the National Register are works of modern architecture or scientific facilities. Additionally, in order for a structure or building to be listed in the National Register, it must possess historic integrity of those features necessary to convey its significance (i.e., location, design, setting, workmanship, materials, feeling, and association). For more information see National Register Bulletin #15, How to Apply the National Register Criteria for Evaluation (NPS 1990).

AREA OF POTENTIAL EFFECTS

For the proposed undertaking, the Area of Potential Effect (APE) is the Fort Hunt Park boundary. The historic structures located within the APE are presented in Figure 9 and are described in the following sections. The preliminary APE was determined by the visual influence of proposed actions identified in the SDP.

HISTORIC STRUCTURES AND DISTRICTS

This section addresses historic properties present that have been included in or have been determined eligible for the NRHP as buildings or historic districts. The Fort Hunt Development Plan and EA/AoE has the potential to affect three historic districts listed in the NRHP: Fort Hunt Park Historic District, the George Washington Memorial Parkway Historic District, and the Mount Vernon Memorial Highway Historic District.

Historic Districts within the APE

Fort Hunt Park, a unit of GWMP, was listed as an historic district in the NRHP on March 26, 1980. The district is significant under Criterion A for its association with military history (NPS 1980).

The park, sited on a portion of land once occupied by George Washington's River Farm, began its extensive military history in the late 1880s when the location – then known as Sheridan's Point - was identified by President Grover Cleveland's Endicott Board as a strategic position for a coastal artillery battery to defend the nation's capitol (Laird 2000). The board, charged with assessing the nation's outdated coastal defenses during the era, chose the location to compliment Fort Washington, first completed in 1809 on the opposing bank of the Potomac River and replaced in 1824. Together, the batteries were intended to repel a seaborne attack. The defensive complex of batteries erected on the site was one of a series of seacoast defenses devised by the board; now known as the Endicott System, these defenses were built between 1889 and 1910, to guard twenty-six major U.S. ports.



Figure 9. Historic Structures within the APE

Officially named “Fort Hunt” on April 13, 1899, the post never witnessed any hostile military action, and was obsolete and abandoned by 1923. The following year, the War Department declared Fort Hunt surplus property. Over the subsequent decade, Fort Hunt was little used. In 1928, the fort was re-garrisoned by the 16th Infantry Brigade, and in 1931, the War Department authorized an African-American ROTC unit to drill periodically at the site. That same year, the War Department determined it was no longer financially feasible to operate Fort Hunt and sought to dispose of the property.

By this time a new parkway, known as the Mount Vernon Memorial Highway, under construction since 1929, bisected Fort Hunt’s eastern property. Fort Hunt was officially incorporated into the roadway and purchased by the Director of Public Buildings and Public Parks of the National Capital from the Secretary of War after the passing of the Capper-Cramton Act in 1930, which authorized a “George Washington Memorial Parkway.” The fort was transferred to the NPS in 1932.

Since becoming an NPS property, Fort Hunt has served various functions. During three “Bonus Marches” in 1932, 1933, and 1934, WWI veterans agitating for early payment of federal bonuses used Fort Hunt as a temporary tent city. While the veterans were not successful in securing the federal funds, they were influential

in President Roosevelt's creation of the Civilian Conservation Corps (CCC), which employed men to perform conservation work in national parks and other federal lands. From October 1933 until March 1942, Fort Hunt functioned as a CCC camp. Work at the camp was primarily focused on creating a recreational site with park amenities. The CCC crew cleared vegetation, created trails and bridle paths, constructed rustic "parkitecture" for the picnic areas, and erected numerous buildings, most of which were temporary. Historic photos document the excavation of a small lake (referred to as the CCC pond throughout this document) in a swampy ravine at the south end of the site around 1935.

In May of 1942, the Secretary of the Interior approved a special use permit for the Department of the Army to occupy Fort Hunt for the duration of the war, plus one additional year. Under the operation of the Department of the Army, Fort Hunt became a top-secret military intelligence center known as P.O. Box 1142. Several programs operated out of eighty-seven buildings on site – many newly erected for temporary use. Programs included MIS-Y (Military Intelligence Service-Y), which was a joint interrogation center for German prisoners of war (POWs) and MIS-X (Military Intelligence Service-X), which was responsible for aiding American POWs to escape German camps by sending "care packages" that contained concealed escape tools. A third program, MIRS (Military Intelligence Research Section) supported interrogation efforts and tactical decisions. During P.O. Box 1142's operation from July 1942 through November 1946, 3,451 POWs were held and nearly 5,000 interrogations were conducted (NPS 2001, revised 2004). By the fall of 1946, with the war over and the operations at P.O. Box 1142 terminated, Fort Hunt was declared surplus by the War Department and the buildings were dismantled; in January 1948, the site was transferred back to the NPS. Because the veterans of P.O. Box 1142 signed a secrecy agreement and their work was classified, the site's WWII history was little known by NPS officials during the decades that followed.

The NPS regarded Fort Hunt as an "essential part of the federal parks serving the Washington Metropolitan area," and in the 1960s, officials focused on developing the park for recreational and public use purposes with funds from the Mission 66 program (Laird 2000). Cornelius W. Heine, Chief of the Division of Public Use and Interpretation of National Capital Parks recommended installing picnic tables, fireplaces, drinking fountains, and nature trails. From 1963-64, an 8,000-square-foot picnic pavilion was erected on the site along with two comfort stations, interpretive waysides, three softball diamonds, and the western portion of the loop road. Fort Hunt Park, encompassing over 150 acres and boasting new public amenities, opened to the public in 1964.

Documents from P.O. Box 1142 began to be declassified in waves starting in 1977, and in 1990 Lloyd Shoemaker – a former employee at the complex – published his firsthand account of the clandestine programs in his book *The Escape Factory*. Since the publication of this document, GWMP officials have worked with veterans to capture and document Fort Hunt's story and have conducted more than seventy-two interviews of veterans and others associated with the site, including two German POWs and three German scientists.

In October 2008, GWMP officials organized a reunion at Fort Hunt Park for veterans of P.O. Box 1142. At precisely 11:42 a.m., a new flag pole – reestablished in its war-time location – was dedicated to honor those soldiers who were heretofore unrecognized (Vincent Santucci, Chief Ranger, GWMP, in a presentation at Fort Hunt Park, October 27, 2010).

Following are the contributing resources of the historic district:

Battery Mount Vernon: Constructed 1896-1898, the largest and westernmost battery at Fort Hunt Park

Battery Porter: Constructed 1898-1901, intended to draw enemy ships into range of Battery Mount Vernon's guns

Battery Robinson: Constructed 1898-1901, intended to draw enemy ships into range of Battery Mount Vernon's guns

Battery Sater: Constructed 1900-1903, intended to increase the naval mine or torpedo field between Fort Hunt and Fort Washington against torpedo boats and other small craft

Battery Commander's Station: Constructed 1899-1901, used for observation and direction of the fire from guns. The tower was to communicate with Fort Washington by cable lines under the river and with the batteries by buried phone lines

NCO Quarters: Constructed 1905, easternmost and only extant house of a row of three houses

Fort Hunt Overpass: Constructed 1929, designed by landscape architect Gilmore Clarke to carry the parkway over the Fort Hunt underpass

The Brick Storage Building (also known as the CCC Oil Storage House): Constructed circa 1935, potentially built by the CCC. Although not listed on the national register nomination, the Cultural Landscape Inventory determined the building to be a contributing resource

Wharf pilings: remnants of two historic wharves used to transfer supplies and construction materials to Fort Hunt. Although not listed on the NRHP nomination, the Cultural Landscape Inventory determined the structure to be a contributing resource

The undertaking has the potential to affect a second historic district listed in the NRHP – The GWMP. George Washington Memorial Parkway (GWMP) was listed as an historic district on April 19, 1995, under Criterion B for its commemoration of George Washington and Clara Barton, as well as Criterion C for its landscape architecture.

GWMP which occupies 7,749.64 acres of land in Virginia, Maryland, and the District of Columbia, is traversed by a planned and landscaped roadway system that extends approximately 25 miles along the Potomac River in Virginia. Initially conceived as a memorial to George Washington, the parkway was authorized by Congress in 1928. Construction of the road, known as the Mount Vernon Memorial Highway (MVMH), commenced in 1929. With the passage of the Capper-Cramton Act the following year, Congress authorized a "George Washington Memorial Parkway," which incorporated the MVMH and was conceived to flank both sides of the Potomac River to Great Falls. Construction on the MVMH portion of the new roadway was completed in three years, opening in 1932 for the bicentennial of Washington's birth. The northern sections of the George Washington Memorial Parkway authorized in 1930 were constructed from 1935 to 1962, while the final section in Maryland, now known as the Clara Barton Parkway, was completed in 1970.

Approximately nine million visitors use the parks at GWMP annually, including the national and international monuments and memorials, natural and recreational areas, trails, a living history farm, historic homes, and an arts and crafts park. These sites, while each possessing a distinct history and individual merits, are united by the parkway and together represent broad themes in the nation's history.

An important recreational feature of GWMP is the 18-mile, multi-use Mount Vernon Trail (MVT) that parallels the parkway. Construction began on the trail in 1972, with the first section laid out between 14th Street Bridge and Alexandria. The NPS improved and extended the trail over the subsequent decades, including a northern extension of the MVT from Memorial Bridge to Theodore Roosevelt Island completed in the 1980s.

Since its inception the parkway has served as a grand entryway to the nation's capital and as a steward to the Potomac River and its watersheds. The following park sites are under the jurisdiction of GWMP: Arlington House: The Robert E. Lee Memorial; Arlington Memorial Bridge & Memorial Avenue; Belle Haven Marina; Belle Haven Park; Clara Barton National Historic Site; Collingwood Park; Columbia Island Marina; Claude Moore Colonial Farm; Daingerfield Island; Dyke Marsh Wildlife Preserve; Fort Hunt Park; Fort Marcy; Glen Echo Park; Gravelly Point; Great Falls Park; Jones Point Park; Lady Bird Johnson Park; Lyndon Baines Johnson Memorial Grove-on-the-Potomac; Mount Vernon Trail, Netherlands Carillon; Riverside Park; Roaches Run Waterfowl Sanctuary; Theodore Roosevelt Island; Turkey Run Park; U.S. Marine Corps War Memorial; Washington Sailing Marina; and the Women in Military Service For America Memorial.

While some of these sites were included in the original parkway authorization, others were separately legislated and incorporated under the Administration of GWMP, including Arlington House: The Robert E. Lee Memorial; Clara Barton National Historic Site; Lady Bird Johnson Park; and Theodore Roosevelt Island.

CULTURAL LANDSCAPES

Cultural landscapes, as defined in the NPS's Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment, and Management of Historic Landscapes (NPS 1994), consist of "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values." The proposed alternatives have the potential to affect, directly or indirectly, one individually significant cultural landscape: Fort Hunt Park. There are no identified formal component landscapes within Fort Hunt Park.

A Cultural Landscape Inventory (CLI) was completed by the NPS for Fort Hunt Park in 2001 (NPS 2001, revised 2004). The CLI specified the features of Fort Hunt Park that contribute to the landscape's significance. These include structures, circulation features, land use activities, small-scale features, vegetation, and views and vistas.

Contributing structures to the CLI include Battery Mount Vernon, Battery Porter, Battery Robinson, Battery Sater, the Battery Commander's Station, the NCO Quarters, the Fort Hunt Overpass, the brick storage buildings and the wharf pilings.

Contributing circulation features include both road and trail elements. The CLI identified the Fort Hunt access road to the northbound George Washington Memorial Parkway, which travels under the Fort Hunt Overpass as a contributing element. Several routes of historic roads extant in Area A are also contributing elements; these include a service road that extends west from the picnic pavilion through picnic Area A, historic road beds lined with allees of trees, and historic road beds identified by raised grass lanes. A remnant loop road north of the CCC pond, which once led to an entrance to the parkway, is a contributing circulation feature. Finally, CCC trails in Area E and the wooded area at the south of the park were identified as contributing elements.

The CLI determined that land-use activities, including picnicking and other types of family recreation contribute to the significance of Fort Hunt Park.

Identified contributing small-scale features include an obelisk-shaped granite boundary marker on the NPS boundary at Fort Hunt Road and a wood marker located nearby. The CLI determined five stone fireplaces in the wooded area at the south of the park, examples of CCC “parkitecture,” are also contributing.

Contributing vegetation includes allees and other older trees within Area A; open, grassed fields; a pair of “Canadian” oaks planted in 1939 in Area B to commemorate the visit of the King and Queen of England (these trees have more recently been identified as pin oaks; only one pin oak remains); dense, irregular grouping of native trees along the historic pasture line traversing the center of the site and separating areas A and D from B and C; a treeline of red maples growing along an old streambed separating Area C1 and Area B; a treeline defining an old roadbed between Areas C1 and C2; the woodland border around the entire perimeter; and the woodland to the south in Areas E and F.

The cultural landscape at Fort Hunt Park also includes views and vistas. Although many of these views are now obstructed by vegetation, some of the most important include historic views south down the Potomac River and east to Fort Washington from the four batteries and the Battery Commander’s Station. Contributing internal views include views across fields in the central area; views down allees of trees lining historic road alignments; views of the surrounding woods from the central area; and vistas to the four batteries and to the Battery Commander’s Station.

ARCHEOLOGICAL RESOURCES

This section addresses archeological resources present or potentially present within the APE defined by NPS for this undertaking. The APE for Historic Resources includes the entire Fort Hunt Park National Historic District. However, at this point, ground-disturbing activities that could impact archaeological resources include two alternative locations for a visitor facility, revisions to the road access system, removal of parking areas and picnic facilities, and associated infrastructure utilities, such as water and sewer, among others.

Few archaeological investigations have been conducted within Fort Hunt Park. In a memo, Inashima (1986) documents investigations conducted at the location of a proposed park access road, Virta (1991) reports on investigations conducted in advance of a sewer line connection, and Shellenhamer (2009) describes the results of a surface penetrating radar survey in the park conducted to locate WWII-era archaeological resources. A memo has been prepared that documents small scale investigations at picnic shelter locations (Bies 2005). Nearby, Inashima (1985) reports on investigations, at which archaeological resources were found, at several locations along the Parkway adjacent to the park.

There have been no archaeological sites registered with the Virginia Department of Historic Resources (VDHR) within Fort Hunt Park as of April 2011. However, seven archaeological sites have been located within one mile of Fort Hunt on the floodplain between the George Washington Memorial Parkway and the Potomac River. These seven sites document a continuous occupation of areas adjacent to Fort Hunt Park from the PaleoIndian period, almost 14,000 years ago, to the present. VDHR assigns what is known as a trinomial site number to each archaeological site reported in the Commonwealth. The site number consists of three parts: the state number based on the alphabetical position of the state name, in this instance 44 for Virginia, followed by a county abbreviation, or in this instance FX for Fairfax County, and lastly a unique site number. For instance, 44FX0001 is the first archaeological site reported to VDHR in Fairfax County in Virginia. For

the seven archaeological sites located within one-mile of Fort Hunt, PaleoIndian and Archaic period (7500-1000 BC) occupations have been identified at site 44FX0211, while Middle Woodland (300 BC-AD1000) camps and villages have been identified at sites 44FX0618, 44FX2323, and 44FX2551. A Late Woodland (AD1000-contact) component is present at site 44FX2323, unidentified Woodland occupations are present at 44FX0211 and 44FX0713, and an unidentified pre-contact Native American site is at 44FX1064. Historic period sites include a possible Civil War winter encampment at 44FX2745 and a late eighteenth to early nineteenth century domestic occupation at 44FX0713. The term occupation signifies the presence of some type of human settlement. Occupations can include camps, villages, farmsteads, forts, or towns, among others. While all of the sites near Fort Hunt are located on floodplain formations, and much of the park is situated on a high terrace plateau overlooking the Potomac River, the density of pre-contact Native American sites in the vicinity suggests that Fort Hunt Park has a high potential for the presence of unidentified pre-contact Native American sites. There is also a significant likelihood, based on the known archaeological record in the region and the history of the site, for post-contact Native American sites.

Fort Hunt Park, once part of George Washington's River Farm, is also associated with a rich military history that began in the last quarter of the nineteenth century. The Historic Structures and Districts section of Chapter 3 provides a more complete discussion of this history, which has been recognized by the listing of the Fort Hunt Historic District NRHP district. The fort, initially part of the coastal defense system of Washington, DC, was later used as a training facility for African-American ROTC units, and after disposal of the property by the War Department, became part of the National Park system. During the Great Depression the park ceased to be used by the military and was used for a CCC camp. Many park amenities were constructed during that period. However, it was during WWII that Fort Hunt was used as a top-secret military intelligence center (known as P.O. Box 1142) that included an interrogation center for Axis POWs. By 1948, the military facilities associated with the WWII facility had been dismantled and the park was transferred back to the NPS. Many of the WWII facilities are represented within Fort Hunt Park as foundations.

VISITOR USE AND EXPERIENCE

Fort Hunt Park supports a number of recreational activities, including permitted picnics at four picnic areas, ball fields, volleyball courts, a playground, and trails. Park visitors come to the site to participate in recreation or to experience the cultural and natural resources. Fort Hunt Park saw a total of 204,694 visitors in 2010 (through September), the majority of which utilized the picnic pavilions and areas in the spring and summer months (Table 4). Providing this recreational access to the community is important to maintaining an enjoyable visitor experience. According to NPS Management Policies (2006), the NPS is committed to providing appropriate, high quality opportunities for visitors to enjoy parks, and maintain an open, inviting, and accessible atmosphere within parks for every segment of society.

Fort Hunt Park has seen increased visitation in the last five years. The park saw a total of 166,788 visitors in 2009. The majority of visitors utilize the park's picnic facilities. The park has five designated picnic pavilions and areas. Picnic Area E is available on a first-come, first-served basis and contains no covered pavilion. Picnic Pavilions A, B, and D and Picnic Pavilion/Area C are available by reservation from April through October. Picnic Pavilion A is the largest in the park and allows up to 600 users at a time, although groups often exceed the permitted number of users.

Table 5 displays the maximum capacity for each picnic pavilion and area and the number of parking spaces provided at each area. The total permitted number of users when all reservation-only picnic pavilions and areas are booked to capacity is 1,390 people (Recreation.gov n.d.). ADA-compliant picnic tables are provided at Picnic Pavilions A, B, and D and Picnic Area C-2. Visitors from January through September 2010 totaled 204,694. The park sees the majority of visitors in the spring and summer months, when the picnic pavilions and areas throughout the park are available for reservation.

Table 4. Fort Hunt Park Monthly Visitation

	2011	2010	2009	2008	2007	2006
January	11,386	5,602	2,500	2,152	874	3,585
February	18,006	4,319	3,076	1,908	2,534	4,787
March	23,623	62,104	2,022	6,747	8,396	8,432
April	32,715	48,801	33,887	15,457	12,808	15,927
May	14,685	12,753	14,960	16,341	13,905	18,061
June	-----	30,000	29,152	16,915	17,219	2,347
July	-----	30,000	17,268	17,890	15,549	16,696
August	-----	9,711	16,525	13,053	14,631	13,405
September	-----	1,404	15,721	20,526	13,796	13,796
October	-----	13,757	17,165	9,420	8,302	2,100
November	-----	8,171	8,803	29,800	7,565	955
December	-----	6,280	5,709	4,687	4,703	4,703
Total	102,426*	234,912	166,788	154,896	120,282	104,794

Visitation numbers in some cases are estimated due to inaccuracies resulting from construction activities and/or device error.

* Data is available through May 2011.

Fort Hunt Park’s picnic facilities are popular with users in the DC Metro Area because the cost of rental is low compared with other local parks and the park has a large green space associated with the pavilions. Additionally, Fort Hunt Park is one of few parks in the region which allows for the consumption of alcohol on site. The park’s reservation system prohibits the reservation of multiple pavilions by the same group, as this limits public use, creates traffic congestion, and stresses park infrastructure. Parking is provided at multiple lots in proximity to the picnic pavilions and areas. Neighbors experience overflow parking onto local streets and disruptive noise levels during times of peak use.

Table 5. Picnic Area Capacities

Picnic Pavilion/Area	Maximum Capacity	Parking Spaces
A	600	150
B	350	140
C-1	100	40
C-2	120	40
C-3	100	40
D	120	30

SOURCE: Data compiled from NPS 2011b.



Figure 10. Picnic Facilities: (top left), Picnic Area C-3 (top right), (bottom left), and (bottom right).

Restrooms are provided near the picnic pavilions. Picnic Area A has an indoor ADA-accessible restroom with electricity and flush toilets. Picnic Areas B, C, and E have indoor restrooms with flush toilets that are closed during the winter months. The restrooms at Picnic Areas B, C, and E do not meet current ADA accessibility standards. Picnic Area D has portable toilets during the summer months. Restroom facilities are not currently adequate to support times of peak visitor use; there are not enough facilities to support visitor numbers.

In addition to the picnic facilities, there are three ball fields, a playground, and two volleyball courts available for recreational use in Fort Hunt Park (see Figure 11). The ball fields are used for pick-up games by picnickers and casual visitors. There are no sport leagues utilizing the park. Hiking and biking pathways are available to visitors, along park roads and unpaved trails. Visitors expressed concern during project scoping with pedestrian and vehicular conflicts along the park loop road. These concerns were attributed to high vehicle speeds within the park. Fort Hunt Park is connected to the Mount Vernon Trail, an 18-mile trail along the Potomac leading to Theodore Roosevelt Island. Many visitors enjoy visiting the horses at the park police paddocks. The NPS offers Special Use Permits for activities such as high school races. On Sunday evenings throughout the summer, the park is host to the Fort Hunt Concert Series. The concerts are free, open to the public, and include a variety of jazz, folk, rock, and other musical styles.



Figure 11. Recreational Facilities: Volleyball court (top left), Biker using trail through Area A (top right), playground (bottom left), and the parade ground being utilized for children’s soccer (bottom right).

Currently, visitors to the park can explore the exteriors of former gun batteries and the Battery Commander’s Station. A series of eight wayside exhibits interpret various aspects of the site’s history. A WWII memorial consisting of a flagpole and memorial marker is on site. These resources, while providing some opportunities to interpret history, are limited in communicating the depth and diversity of history at Fort Hunt.

PARK OPERATIONS AND MANAGEMENT

Fort Hunt Park is a site within GWMP. The park, which occupies 7,749.64 acres of land in Virginia, Maryland, and the District of Columbia, is traversed by a planned and landscaped roadway that extends approximately 25 miles along the Potomac River. Fort Hunt Park is near the southern terminus of the Parkway. GWMP is made up of many parks, including: Arlington House, Arlington Memorial Bridge and Memorial Avenue, Belle Haven Marina, Belle Haven Park, Clara Barton National Historic Site, Collingwood Park, Columbia Island Marina, Claude Moore Colonial Farm, Daingerfield Island, Dyke Marsh Wildlife Preserve, Fort Hunt Park, Fort Marcy, Glen Echo Park, Gravelly Point, Great Falls Park, Jones Point Park, Lady Bird Johnson Park, Lyndon Baines Johnson Memorial Grove-on-the-Potomac, Mount Vernon Trail, Netherlands Carillon, Potomac Heritage Trail, Riverside Park, Roaches Run Waterfowl Sanctuary, Theodore Roosevelt Island, Turkey Run Park, U.S. Marine Corps War Memorial, Washington Sailing Marina, and Women in Military Service for America Memorial.

Fort Hunt Park is currently accessible from an entrance off Fort Hunt Road. The entrance road itself does not clearly establish a strong sense of arrival to Fort Hunt Park. Public scoping comments revealed that many park visitors and neighbors do not want any additional vehicular entrances to the park. The public also expressed a need for better accessibility to Fort Hunt Park from the neighborhood. Currently, neighbors access the road by walking/biking on Fort Hunt Road to the vehicular entrance; many find pedestrian travel along Fort Hunt Road to be unsafe. The roadway within Fort Hunt Park generally forms a loop following the perimeter of open spaces in the park.

Fort Hunt Park is open year-round from 7:00 a.m. to sunset (NPS 2011a). Picnic Area E is open on a first-come, first-served basis. Picnic Areas A, B, C-1, C-2, C-3, and D are available by reservation from April through October. Alcohol consumption is allowed at the park for those with a picnic area permit. The Fort Hunt Concert Series takes place on Sunday evenings from 7:00 p.m. to 8:00 p.m. during the summer months.

The Fort Hunt Park Maintenance Facility is used to store equipment for the maintenance of the southern section of the Parkway, which includes the area south of the Woodrow Wilson Memorial Bridge. Specifically, the facility at Fort Hunt Park is used for fuel storage and storage of snow removal trucks.

The NPS park police station within Fort Hunt Park contains paddocks for housing park police horses which are used throughout the local NPS parks. The former police barracks at this site burned down, and a temporary structure now houses the park police station.

There are six park police staff that utilize the station within Fort Hunt Park, which service the southern portion of the Parkway. Park users indicated during public scoping that they would like to maintain the park police presence within the park as a crime deterrent and some comments asked for additional staffing to support the park.

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CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

This “Environmental Consequences” chapter analyzes both beneficial and adverse impacts that would result from implementing any of the alternatives considered in this EA/AoE. This chapter also includes definitions of impact thresholds (e.g., negligible, minor, moderate, and major), methods used to analyze impacts, and the methods used for determining cumulative impacts. As required by CEQ regulations implementing NEPA, a summary of the environmental consequences for each alternative is provided in Table 3, which can be found in “Chapter 2: Alternatives.” The resource topics presented in this chapter, and the organization of the topics, correspond to the resource discussions contained in “Chapter 3: Affected Environment.”

GENERAL METHODOLOGY FOR ESTABLISHING IMPACT THRESHOLDS AND MEASURING EFFECTS BY RESOURCE

The following elements were used in the general approach for establishing impact thresholds and measuring the effects of the alternatives on each resource category:

- general analysis methods as described in guiding regulations, including the context and duration of environmental effects;
- basic assumptions used to formulate the specific methods used in this analysis;
- thresholds used to define the level of impact resulting from each alternative;
- methods used to evaluate the cumulative impacts of each alternative in combination with unrelated factors or actions affecting park resources; and
- methods and thresholds used to determine if impairment of specific resources would occur under any alternative

These elements are described in the following sections.

GENERAL ANALYSIS METHODS

The analysis of impacts follows CEQ guidelines and DO-12 procedures (NPS, 2001) and is based on the underlying goal of supporting enhanced visitor experience and providing for long-term protection, conservation, and restoration of park resources. This analysis incorporates the best available scientific literature applicable to the region and setting, the species being evaluated, and the actions being considered in the alternatives.

As described in chapter 1, the NPS created an interdisciplinary science team to provide important input to the impact analysis. For each resource topic addressed in this chapter, the applicable analysis methods are discussed, including assumptions and impact intensity thresholds.

IMPACT THRESHOLDS

Determining impact thresholds is a key component in applying NPS Management Policies (2006) and DO-12. These thresholds provide the reader with an idea of the intensity of a given impact on a specific topic. The impact threshold is determined primarily by comparing the effect to a relevant standard based on applicable or relevant/appropriate regulations or guidance, scientific literature and research, or best professional judgment.

Because definitions of intensity vary by impact topic, intensity definitions are provided separately for each impact topic analyzed in this document. Intensity definitions are provided throughout the analysis for negligible, minor, moderate, and major impacts. In all cases, the impact thresholds are defined for adverse impacts. Beneficial impacts are addressed qualitatively.

Potential impacts of all alternatives are described in terms of type (beneficial or adverse); context; duration (short- or long-term); and intensity (negligible, minor, moderate, major). Definitions of these descriptors include:

Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.

Adverse: A change that declines, degrades, and/or moves the resource away from a desired condition or detracts from its appearance or condition.

Context: Context is the affected environment within which an impact would occur, such as local, park-wide, regional, global, affected interests, society as whole, or any combination of these. Context is variable and depends on the circumstances involved with each impact topic. As such, the impact analysis determines the context, not vice versa. Site-specific impacts would occur at the location of the action, local impacts would occur within the general vicinity of the project area, park wide impacts would affect a greater portion outside the project area yet within the park, and region wide impacts would extend beyond park boundaries.

Duration: Impacts can be either short-term or long-term. A short-term impact would be temporary in duration and would be associated with the construction process. Depending on the resource, impacts would last as long as construction was taking place, or up to one year after construction is completed. Long-term impacts last beyond the construction period, and the resources may need more than one year post-construction to resume their preconstruction condition. Impact duration for each resource may differ and is presented for each resource topic, where applicable.

Intensity: Because definitions of impact intensity (negligible, minor, moderate, and major) vary by impact topic, intensity definitions are provided separately for each impact topic analyzed.

STUDY AREA

The project study area is generally the Fort Hunt Park, which is the 105-acre park under the jurisdiction of the NPS, part of GWMP and adjacent to the Potomac River to the south and east and residential areas of Mount Vernon to the north and west (refer back to Figure 1). In some cases, the study area for individual resource topics vary and are defined separately for each impact topic if it is different than the general study area.

CUMULATIVE IMPACTS ANALYSIS METHOD

The CEQ regulations to implement NEPA require the assessment of cumulative impacts in the decision making process for federal projects. Cumulative impacts are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions” (40 CFR 1508.7). As stated in the CEQ handbook, “Considering Cumulative Effects” (CEQ 1997), cumulative impacts need to be analyzed in terms of the specific resource, ecosystem, and human community being

affected and should focus on effects that are truly meaningful. Cumulative impacts are considered for all alternatives, including the No Action Alternative. To determine the potential cumulative impacts, existing and anticipated future projects within the study area and in the surrounding area were identified. These projects identified as cumulative actions are provided in Table 6.

The analysis of cumulative impacts was accomplished using four steps:

Step 1 — Identify Resources Affected - Fully identify resources affected by any of the alternatives. These include the resources addressed as impact topics in chapters 3 and 4 of the document.

Step 2 — Set Boundaries - Identify an appropriate geographic boundary for each resource. The geographic boundary for each resource topic is listed under each topic.

Step 3 — Identify Cumulative Action Scenario - Determine which past, present, and reasonably foreseeable future actions to include with each resource. Reasonably foreseeable project are generally those anticipated to be implemented in a 3 to 5 years period. These are listed in Table 6 and described below.

Step 4 — Cumulative Impact Analysis - Summarize impacts of these other actions (x) plus impacts of the proposed action (y), to arrive at the total cumulative impact (z). This analysis is included for each resource in chapter 4.

The locations of the cumulative impact projects identified for this EA/AoE are presented in Figure 12. Descriptions are presented in Table 6.

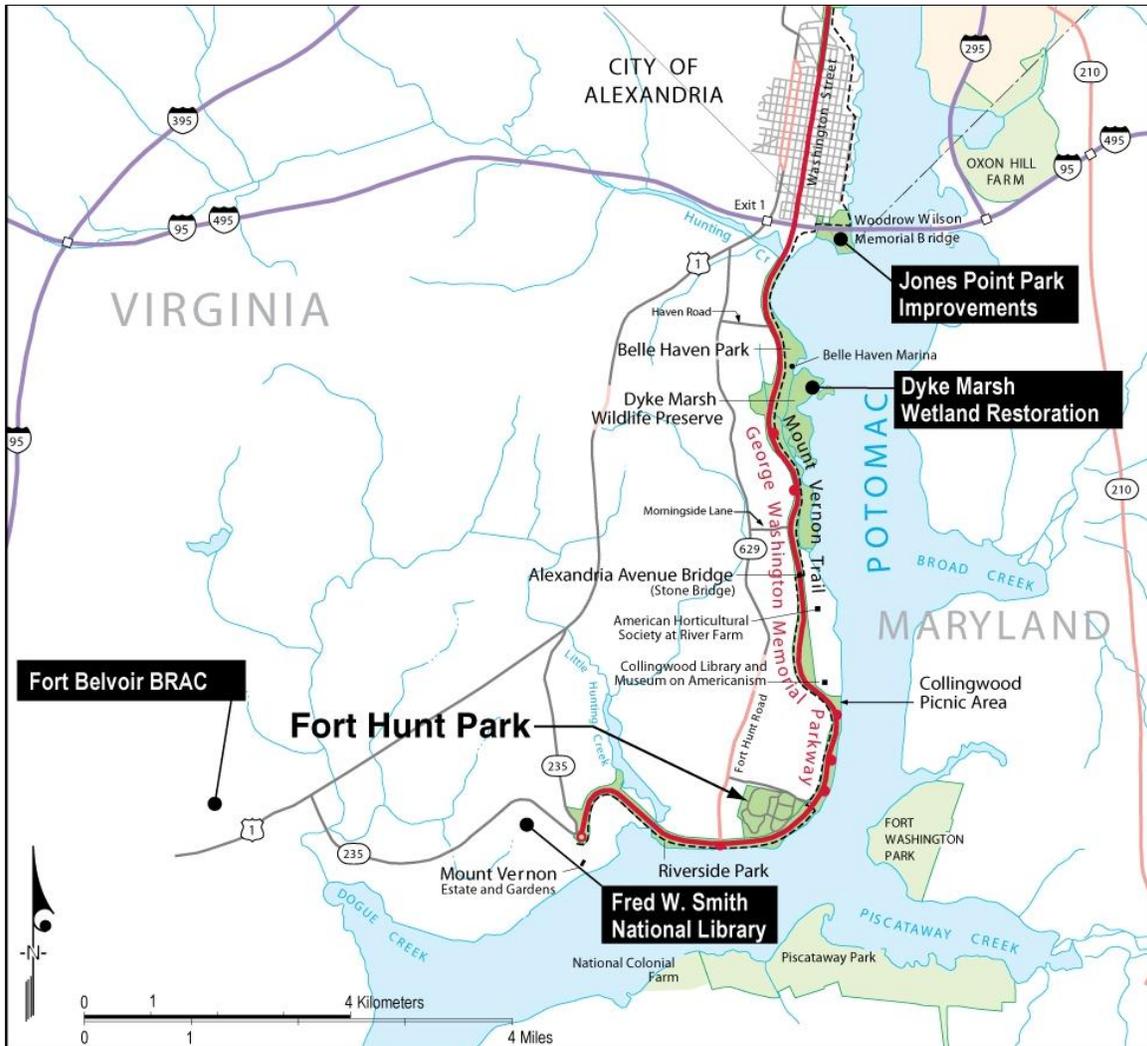


Figure 12. Cumulative Impact Projects

Table 6. Cumulative Impact Projects

Type of Action	Cumulative Impact Project	Description	Status
GWMP Projects	Dyke Marsh Wetland Restoration and Long Term Management Plan/ EIS (NPS 2008a)	<p>The EIS evaluated alternatives to protect existing wetlands from erosion, exotic plant species, loss of habitat, and altered hydrologic regimes.</p> <p>Affected Resource Areas: The wetland restoration and management plan would potentially have impacts to soils, vegetation, wildlife, and visitor use and experience.</p>	Future
	Jones Point Park Improvements/ Enhancements - EA and FONSI (NPS/FHWA 2007)	<p>As part of the Woodrow Wilson Bridge Project, Jones Point Park would undergo improvements including modifications to parking and access within the park, rehabilitation of the Jones Point Lighthouse, improvements to the fishing pier, and shoreline stabilization.</p> <p>Affected Resource Areas: The EA and FONSI identified impacts to the following resource areas; visitor use and experience, soils, vegetation, wildlife, and historic and archeological resources.</p>	Present
Regional Projects in Vicinity of Fort Hunt Park	Fred W. Smith National Library for the Study of George Washington (Mount Vernon Ladies' Association 2011a)	<p>The project includes the construction of a library, courtyard, parking lot, and guesthouse covering 5 acres of the Mount Vernon Estate. The library would be three stories, 45,000 square feet, and would be built into a hillside to take advantage of topography and views.</p> <p>Affected Resource Areas: The new facility construction would potentially have impacts to soils and vegetation.</p>	Future 2012
	Fort Belvoir Base Realignment and Closure (BRAC) (Fairfax County EDA n.d.)	<p>As part of the BRAC plan, Fort Belvoir would receive an additional 14,000 civilian and military workers by September 2011. Additional building space and redevelopment of existing buildings has been on-going to prepare for the additional workers.</p> <p>Affected Resource Areas: The Final EIS for the Fort Belvoir BRAC identified impacts to the following resource areas: noise, soils, vegetation, wildlife, cultural resources (Tetra Tech, Inc. 2007).</p>	Future 2011

Type of Action	Cumulative Impact Project	Description	Status
Local and Regional Plans	Chesapeake Bay Bald Eagle Recovery Plan (USFWS 1990)	<p>An action plan dedicated to achieving recovery of the bald eagle population in the Chesapeake Bay region. Strategies for recovery include long-term maintenance of shoreline habitat and food resources and public awareness. 1990 revisions of the plan recognized the improving status of the bald eagle population in the region.</p> <p>Affected Resource Areas: The protection of bald eagles and their habitat has resulted in impacts to vegetation and wildlife.</p>	Ongoing
	Fairfax County Comprehensive Plan/Area Plan (Fairfax County 2011a)	<p>A document used by County government and the public in order to guide decisions regarding the built and natural environment. The plan is reviewed every four years to ensure maximum citizen participation.</p> <p>Affected Resource Areas: All resource areas analyzed in this EA are addressed by the goals of the Comprehensive Plan.</p>	Ongoing
	National Capital Region Transportation Improvement Plan (TIP) (MWCOG 2010)	<p>The TIP consists of short-term and long-term transportation project planning for Virginia, Maryland, and Washington DC. The TIP addresses federal requirements associated with transit construction.</p> <p>Affected Resource Areas: Transportation</p>	Present
	Virginia Coastal Zone Management Program (VDEQ 2010c)	<p>Program initiated by federal law in order to manage coastal zone resources. Enforceable laws are organized under Coastal Zone Management including wetlands, fisheries, dunes, and other environmental shoreline features.</p> <p>Affected Resource Areas: Coastal Zone Management has resulted in impacts to vegetation and wildlife.</p>	Ongoing

SOILS

METHODOLOGY AND ASSUMPTIONS

For soil resources, potential impacts were assessed based on limitations associated with the soils and the extent of possible disturbance. Impact analysis and the conclusions for possible impacts to the resources were based on review of existing literature, soil and topography maps, and information provided by the NPS and other agencies.

STUDY AREA

The study area for soils is within the Fort Hunt Park boundary.

IMPACT THRESHOLDS

Negligible: The effects to soils would be at or below the lower levels of detection. Any effects to soils would be slight.

Minor: The effects to soils would be detectable. Area of soil affected would be relatively small. Mitigation may be needed to offset adverse effects and would be relatively simple to implement and likely be successful.

Moderate: The effect on soil would be readily apparent and result in a change to the soil character over a relatively wide area. Mitigation measures would be necessary to offset adverse effects and likely be successful.

Major: The effect on soil would be readily apparent and substantially change the character of the soils over a large area in and out of the park. Mitigation measures to offset adverse effects would be needed, extensive, and their success could not be guaranteed.

Duration: Short-term impacts would result in recovery in less than 3 years; Long-term impacts would take more than 3 years to recover.

IMPACTS OF ALTERNATIVE A: NO ACTION

Under the No Action Alternative, no new facilities would be constructed. There would be no changes to road structure throughout the park. Current maintenance and operation procedures and facilities would remain unchanged. Current drainage patterns would continue, and soil compaction would occur in the recreational areas, which could result in minor soil erosion and compaction on the site. Soil compaction prevents water from infiltrating soils resulting in increased runoff and erosion. Because no new construction would occur, no new earth disturbances would occur, and because existing drainage and compaction issues have minor impacts to soils, the No Action Alternative would result in long-term minor adverse impacts to soils.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions would have long-term minor adverse impacts to soils within the geographic boundary for cumulative impacts. The geographic boundary for soils is the southern portion of GWMP and Fort Hunt sector planning area of the Fairfax County Comprehensive Plan. The No Action Alternative would have minor adverse impacts on soils for reasons stated in the impact analysis and therefore would contribute to the effects of other actions. This contribution would be minor and

consequently, there would be long-term minor adverse cumulative impacts to soils under the No Action Alternative.

CONCLUSION

Implementation of the No Action Alternative would result in long-term minor adverse impacts to soils in the study area due to minor soil erosion and compaction on the site. There would be long-term minor adverse cumulative impacts from the No Action Alternative.

IMPACTS OF ALTERNATIVE B

Under Alternative B, vehicular circulation would follow the existing loop road around the perimeter of the park. The lower portion of the main loop road between existing Picnic Pavilion D and Picnic Area E would be removed from its current location. These areas would be revegetated and maintained as open space.

The proposed visitor facility would be constructed at the current site of Picnic Pavilion B, and would not exceed 6,400 square feet. An interpretive walking trail would originate from the visitor facility. The visitor facility and trail would require soil disturbance/excavation and would result in increased impervious surface.

Permitted picnicking would be limited to Picnic Pavilion A, Picnic Pavilion C, D, and E, and associated restrooms and ball fields would be removed. The proposed construction activities would result in localized soil disturbance within the vicinity of these existing facilities, but would result in a decrease in impervious surface and increased vegetated area.

The ball field near Picnic Pavilion A, located on the parade ground, would be upgraded to improve drainage and seeded with grass to provide a more adequate playing surface and improve current erosion and soil compaction issues. One lane of the two-lane loop road would be designated as a bicycle/pedestrian lane. From the park entrance to Parking Area B, where the road would accommodate two-way vehicular traffic, the road would be widened to accommodate the trail.

For all construction activities, erosion and sediment control measures and other BMPs would be implemented to minimize soil erosion and prevent soils from migrating. Construction access and staging would be designed to avoid and minimize impacts to undisturbed soils. For instance, stabilized construction entrances would be provided and staging areas would be located outside of areas with cultural or natural resources. In areas where structures or impervious surface would be removed, the area would be vegetated, which would prevent post-construction soil erosion.

Under Alternative B, approximately 1.6 acres of impervious surface would be removed at Fort Hunt Park due to the demolition of existing asphalt roads and parking areas, Picnic Pavilion C, and Picnic Pavilion D. Approximately 3.0 acres of impervious surface would be added due to the construction of new asphalt roads, trails, parking, and the proposed visitor facility. Therefore, under Alternative B, impervious surface would increase at Fort Hunt Park by approximately 1.4 acres.

Because protective measures would be employed during construction and disturbed areas would immediately be vegetated following construction, there would be short-term minor adverse impacts to soils under Alternative B. The construction of the visitor facility and interpretive trail would result in long-term minor adverse impacts to soils due to increased impervious surface. In addition, due to the remediation of current

drainage issues, removal of pavilions, buildings, portions of the loop road and parking area that covers soils, Alternative B would also result in beneficial impacts to soils.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions would have long-term minor adverse impacts to soils within the geographic boundary for cumulative impacts. The geographic boundary for soils is the southern portion of GWMP and Fort Hunt sector planning area of the Fairfax County Comprehensive Plan. Best Management Practices for sediment and erosion control as required by Fairfax County and VDCR would be implemented that would minimize soil loss; however, some soil loss and conversion would occur in areas of new facilities. Therefore, Alternative B would have a long-term minor adverse impact. These impacts in combination with the past, present, and reasonably foreseeable future actions would result in long-term minor adverse cumulative impacts because of soil loss resulting from development activities. Alternative B would provide a very minor contribution to the cumulative impact to soils.

CONCLUSION

Under Alternative B, BMPs would be implemented to minimize soil erosion and loss and therefore, short-term minor adverse impacts would result during construction. Alternative B would have long-term minor adverse impacts to soils from soil loss and increase in imperviousness (3.0 acres) from new infrastructure. Alternative B would also result in beneficial impacts to soils because of removal of imperviousness (1.6 acres), the remediation of current drainage issues, and reduction of soil compaction due to social trailing. Alternative B would have long-term minor adverse cumulative impacts to soils.

IMPACTS OF ALTERNATIVE C (PREFERRED ALTERNATIVE)

Under Alternative C, vehicular access would be limited to the northern portion of the existing loop road. The road would terminate via a turn-around in Parking Area C at the site of the proposed visitor facility. The turn-around would be constructed within the existing parking area in order to minimize ground disturbance. As in all Action Alternatives, the lower portion of the main loop road between existing Picnic Pavilion D and Picnic Area E would be removed from its current location.

The proposed visitor facility would be constructed at the current site of Picnic Pavilion C, and would not exceed 6,400 square feet. An interpretive walking trail would originate from the visitor facility.

Permitted picnicking would be limited to Picnic Pavilion A. Picnic Pavilion B, D, and E, and associated restrooms and ball fields would be removed and these areas would be vegetated.

The ball field near Picnic Pavilion A, on the parade ground, would be upgraded to improve drainage and seeded with grass to provide a more adequate playing surface and improve current erosion and soil compaction issues. A designated asphalt bicycle/pedestrian trail would be constructed as a separate facility and would run parallel to the existing loop road in the northern segment, traveling behind the park police and paddocks. In the southern segment, the existing vehicular access road would be converted to a bicycle/pedestrian trail. The cross-section of the road width would be reduced by fifty percent to minimize impervious surfaces and to provide a natural experience along the trail. The remainder of the road cross-section not utilized for the trail would be removed and reestablished in native vegetation.

For all construction activities, erosion and sediment control measures and other BMPs would be implemented to minimize soil erosion and prevent soils from migrating. Construction access and staging would be designed to avoid and minimize impacts to undisturbed soils. In areas where structures would be removed, the area would be vegetated, which would prevent post-construction soil erosion. As a result, Alternative C would have short-term minor adverse impacts during construction.

Alternative C would construct the visitor facility at Picnic Pavilion C, a site with previously disturbed soils, but the visitor facility would result in increased impervious surface. The removal of picnic areas B, D, and E, Parking areas D and E, and the ball field near Area D would result in soil disturbance but would reduce the amount of impervious surface.

Under Alternative C, approximately 2.3 acres of impervious surface would be removed at Fort Hunt Park due to the demolition of existing asphalt roads and parking areas, Picnic Pavilion B, and Picnic Pavilion D. Approximately 3.5 acres of impervious surface would be added due to the construction of new asphalt roads, trails, parking, and the proposed visitor facility. Therefore, under Alternative C, impervious surface would increase at Fort Hunt Park by approximately 1.2 acres.

Because protective measures would be employed during construction and disturbed areas would immediately be seeded following construction, there would be short-term minor adverse impacts to soils under Alternative C. Due to the removal of the pavilions and parking areas and resulting reduction of impervious area, Alternative C would also result in beneficial impacts to soils.

CUMULATIVE IMPACTS

The cumulative impacts for Alternative D are the same as described for Alternative B, as Alternative D will also result in beneficial impacts to soils. Alternative D would provide a very minor contribution to the long-term minor adverse cumulative impact to soils from this action in combination with the past, present, and reasonably foreseeable future actions.

CONCLUSION

Under Alternative C, BMPs would be implemented to minimize soil erosion and loss and therefore, short-term minor adverse impacts would result during construction. Alternative C would have long-term minor adverse impacts to soils from soil loss and increase in imperviousness (3.5 acres) from new infrastructure. Alternative C would also result in beneficial impacts to soils because of removal of imperviousness (2.3 acres), the remediation of current drainage issues, and reduction of soil compaction due to social trailing. Alternative C would have long-term minor adverse cumulative impact to soils.

IMPACTS OF ALTERNATIVE D

Under Alternative D, vehicular circulation would continue along the northern portion of the loop road. A smaller loop would circle the general location of the proposed visitor facility, providing access to the existing Parking Area C near existing Picnic Pavilion and Area C. The eastern alignment of the loop road would follow the existing maintenance road that runs north south through the upper portions of the park open space. The roadway would then reconnect to the entry road east of the visitor facility with a traffic circle. As in all Action Alternatives, the lower portion of the main loop road between existing Picnic Pavilion D and Picnic Area E would be removed from its current location.

The proposed visitor facility would be constructed at the current site of Picnic Pavilion B, and would not exceed 6,400 square feet. An interpretive walking trail would originate from the visitor facility. Permitted picnicking would be limited to Picnic Pavilion C. Picnic Pavilion A, B, D, and E, and associated restrooms and the ball fields associated with Picnic Pavilions B and D would be removed. These areas would be vegetated following the removal of the impervious area.

The ball field near Picnic Pavilion A, on the parade ground, would be upgraded to improve drainage and seeded with grass to provide a more adequate playing surface and improve current erosion and soil compaction issues. A designated asphalt bicycle/pedestrian trail would be created within the existing road alignment of the unused southern loop road. The roadway width would be reduced by fifty percent to reduce impervious surfaces and to provide a natural experience along the trail. The area where asphalt is removed would be to reestablish native vegetation. The trail would continue as a separate recreational trail around the northern portion of the park, traveling behind the park police and paddocks and paralleling the road until it reconnects in order to complete the trail loop.

For all construction activities, erosion and sediment control measures and other BMPs would be implemented to minimize soil erosion and prevent soils from migrating. Construction access and staging would be designed to avoid and minimize impacts to undisturbed soils. In areas where structures would be removed, the area would be seeded, which would prevent post-construction soil erosion.

Under Alternative D, approximately 2.4 acres of impervious surface would be removed at Fort Hunt Park due to the demolition of existing asphalt roads, Picnic Pavilion A, and Picnic Pavilion D. Approximately 2.2 acres of impervious surface would be added due to the construction of new asphalt roads, trails, and parking, and the proposed visitor facility. Therefore, under Alternative D, impervious surface at Fort Hunt Park would be reduced by approximately 0.2 acres.

The proposed visitor facility, interpretive trail, and new trail construction would result in soil disturbance and increased impervious surface. However, because protective measures would be employed during construction and disturbed areas would immediately be seeded following construction, there would be short-term minor adverse impacts to soils under Alternative D. In addition, due to the removal of impervious surface and revegetation of these areas, Alternative D would also result in beneficial impacts to soils.

CUMULATIVE IMPACTS

The cumulative impacts for Alternative D are the same as described for Alternative B, as Alternative D will also result in beneficial impacts to soils. Alternative D would provide a very minor contribution to the long-term minor adverse cumulative impact to soils from this action in combination with the past, present, and reasonably foreseeable future actions.

CONCLUSION

Under Alternative D, BMPs would be implemented to minimize soil erosion and loss and therefore, short-term minor adverse impacts would result during construction. Alternative D would have long-term minor adverse impacts to soils from soil loss and increase in imperviousness (2.2 acres) from new infrastructure. Alternative D would also result in beneficial impacts to soils because of removal of imperviousness (2.4 acres), the remediation of current drainage issues, and reduction of soil compaction due to social trailing. Alternative D would have long-term minor adverse cumulative impact to soils.

VEGETATION

METHODOLOGY AND ASSUMPTIONS

Impacts on vegetation were based on general characteristics of the site and vicinity, site observations, proposed encroachment into vegetated areas associated with construction, and removal of vegetation.

STUDY AREA

The study area for vegetation is entirely within the Fort Hunt Park boundary.

IMPACT THRESHOLDS

Negligible: No native vegetation would be affected or some individual native plants could be affected as a result of the alternative, but there would be no effect on native species populations. The effects would be on a small scale and no species of special concern would be affected.

Minor: The alternative would affect some individual native plants and would also affect a relatively minor portion of that species' population. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern and on-site replacement of all trees removed over 6 inches DBH, could be required and would be effective.

Moderate: The alternative would affect some individual native plants and would also affect a sizeable segment of the species' population and over a relatively large area. Mitigation to offset adverse effects could be extensive, but would likely be successful. Some species of special concern could also be affected. The loss of trees over 6 inches Diameter at Breast Height (DBH) would be mitigated on site.

Major: The alternative would have a considerable effect on native plant populations, including species of special concern, and affect a relatively large area in and out of the park. Mitigation measures to offset the adverse effects would be required, extensive, and success of the mitigation measures would not be guaranteed. The loss of trees over 6 inches Diameter at Breast Height (DBH) will be mitigated on site.

Duration: Short-term impacts would result in recovery in less than 3 years; Long-term impacts would take more than 3 years to recover.

IMPACTS OF ALTERNATIVE A: NO ACTION

Under the No Action Alternative, no vegetation would be removed from the park. There would be no additional facilities constructed and no changes to road structure throughout the park. Current maintenance and operation procedures would continue. There would be no removal of vegetation under the No Action Alternative; therefore, there would be no impact to vegetation.

CUMULATIVE IMPACTS

Although other past, present, and reasonably foreseeable future actions may affect vegetation in the area, the No Action Alternative would have no impacts on vegetation and therefore would not contribute to the effects of other actions. Consequently, there would be no cumulative impacts to vegetation under the No Action Alternative.

CONCLUSION

Implementation of the No Action Alternative would result in no direct, indirect, beneficial, or adverse impacts to vegetation in the study area. There would be no cumulative impacts from the No Action Alternative.

IMPACTS OF ALTERNATIVE B

Under Alternative B, construction activities would result in land disturbance that would have impacts to vegetation. Construction occurring within previously developed land areas would have minimal impacts to vegetation because the majority of these areas are currently impervious or are turf. The construction of the visitor facility at the current site of Picnic Pavilion B would have minimal impacts to vegetation because this area is currently occupied by the pavilion and surrounded by turf. Several scattered trees surround the pavilion and may be impacted by the proposed construction activities.

Realignment of the park entrance to its historic location, the proposed chronological interpretive trail, and widening of the loop road to add a bicycle and pedestrian trail have the potential to cause minor impacts to trees throughout the project area. However, the design and alignment of these facilities would avoid impacts to vegetation to the extent possible. Additionally, BMPs, including elements such as tree protection measures, would be incorporated into the Tree Preservation Plan approved by the NPS to minimize impacts to vegetation where avoidance measures are not feasible.

The removal of parking areas D and E, along with the removal of the southern portion of the existing loop road, would likely result in the removal of trees that exist within the parking areas, but would be vegetated with native species.

Overall, because a large portion of the proposed construction activities would occur in areas which have been previously developed, implementation of projects under Alternative B would likely result in impacts only to individual native plants and minor segments of populations. Therefore, activities proposed under Alternative B would result in long-term negligible adverse impacts to vegetation throughout the project area.

CUMULATIVE IMPACTS

Past or reasonably foreseeable future actions occurring in the study area have affected or could affect vegetation. The geographic boundary for vegetation was defined as the GWMP and Mount Vernon area. These projects include development activities that would have both short-term and long-term adverse impacts to vegetation from construction activities impacting trees and other vegetation. Many of these projects have proposed mitigation to replace trees and other vegetation, which would minimize long-term impacts. Implementation of the Alternative B would have a long-term negligible adverse impact as described in the previous section. This impact in combination with the past, present, and reasonably foreseeable future actions would result in long-term minor adverse cumulative impacts within the geographic boundary for cumulative impacts because of vegetation loss resulting from development activities. Alternative B would have a very minor contribution to the cumulative impact.

CONCLUSION

Under Alternative B, individual projects would include avoidance measures such as the selection of previously developed sites for the construction of new facilities. Where impacts cannot be avoided, the implementation of BMPs would help to minimize impacts to vegetation. Because impacts to vegetation would be limited to

individual native plants and relatively minor portions of native populations, implementation of the actions under Alternative B would result in long-term negligible adverse impacts to vegetation. Long-term minor adverse cumulative impacts to vegetation would occur under Alternative B.

IMPACTS OF ALTERNATIVE C (PREFERRED ALTERNATIVE)

As with Alternative B, Alternative C construction activities would require land disturbance that would have impacts to vegetation. Construction occurring within previously developed land areas would have minimal impacts to vegetation because the majority of these areas are currently unvegetated or turf areas with scattered trees.

Realignment of the park entrance to its historic location, the proposed chronological interpretive trail, the construction of the bicycle/pedestrian trail adjacent to the northern portion of the loop road, and the construction of the visitor facility at the current site of Picnic Pavilion/Area C have the potential to cause minor impacts to trees throughout the project area. However, the design and alignment of these facilities would avoid impacts to trees to the extent possible. Additionally, BMPs, including elements such as tree protection measures, would be incorporated into the Tree Preservation Plan approved by the NPS to minimize impacts to vegetation where avoidance measures are not feasible.

The removal of parking areas D and E, along with the removal of the southern portion of the existing loop road, would result in the removal of trees that exist within the parking areas, but would provide additional area for grass seeding or vegetation with native species.

Overall, because a significant portion of the proposed construction activities would occur in areas which have been previously developed, implementation of projects under Alternative C would likely result in impacts only to individual native plants and minor segments of populations. Therefore, activities proposed under Alternative C would result in long-term minor adverse impacts to vegetation throughout the project area.

CUMULATIVE IMPACTS

The cumulative impacts for Alternative C are the same as described for Alternative B, as Alternative C would also result in long-term minor adverse impacts to vegetation. Alternative C would provide a very minor contribution to the long-term minor adverse cumulative impact to vegetation resulting from this action in combination with the past, present, and reasonably foreseeable future actions.

CONCLUSION

Under Alternative C, individual projects would include avoidance measures such as the selection of previously developed sites for the construction of new facilities. Where impacts cannot be avoided, the implementation of BMPs would help to minimize impacts to vegetation. Because impacts to vegetation would be limited to individual native plants and relatively minor portions of native populations, implementation of the actions under Alternative C would result in long-term minor adverse impacts to vegetation. Long-term minor adverse cumulative impacts to vegetation would occur under Alternative C.

IMPACTS OF ALTERNATIVE D

Similar to the preceding Action Alternatives, Alternative D construction activities would require land disturbance that would have impacts to vegetation. Construction occurring within previously developed land

areas would have minimal impacts to vegetation because the majority of these areas are currently unvegetated or turf areas with scattered trees. The construction of the visitor facility at the current site of Picnic Pavilion B would have minimal impacts to vegetation because this area is currently occupied by the pavilion and surrounded by mown grass and scattered individual trees, mainly behind (to the east of) the pavilion.

Realignment of the park entrance to its historic location, the proposed chronological interpretive trail, and the construction of the bicycle/pedestrian trail adjacent to the northern portion of the loop road have the potential to cause minor impacts to trees throughout the project area. However, the design and alignment of these facilities would avoid impacts to vegetation to the extent possible. Additionally, BMPs, including elements such as tree protection measures, would be incorporated into the Tree Preservation Plan approved by the NPS to minimize impacts to vegetation where avoidance measures are not feasible.

The removal of parking areas D and E, along with the removal of the southern portion of the existing loop road, would result in the removal of trees that exist within the parking areas, but would provide additional area for grass seeding or vegetation with native species.

Overall, because a significant portion of the proposed construction activities would occur in areas which have been previously developed, implementation of projects under Alternative D would likely result in impacts only to individual native plants and minor segments of populations. Therefore, activities proposed under Alternative D would result in long-term minor adverse impacts to vegetation throughout the project area.

CUMULATIVE IMPACTS

The cumulative impacts for Alternative D are the same as described for Alternative B, as Alternative D would also result in long-term minor adverse impacts to vegetation. Alternative D would provide a very minor contribution to the long-term minor adverse cumulative impact to vegetation resulting from this action in combination with the past, present, and reasonably foreseeable future actions.

CONCLUSION

Under Alternative D, individual projects would include avoidance measures such as the selection of previously developed sites for the construction of new facilities. Where impacts cannot be avoided, the implementation of BMPs would help to minimize impacts to vegetation. Because impacts to vegetation would be limited to individual native plants and relatively minor portions of native populations, implementation of the actions under Alternative D would result in long-term minor adverse impacts to vegetation. Long-term minor adverse cumulative impacts to vegetation would occur under Alternative D.

WILDLIFE AND ITS HABITAT

METHODOLOGY AND ASSUMPTIONS

According to NPS Management Policies (2006), NPS is dedicated to preserving the natural abundances, diversities, dynamics, distributions, habitats, and behaviors of native animal populations and the communities in which they occur. In order to evaluate impacts to wildlife, available information on animal species potentially impacted by the proposed alternatives was compiled. Sources include NPS natural resources managers, the U.S. Fish and Wildlife Service, and the Virginia Department of Conservation and Recreation.

STUDY AREA

The study area for wildlife includes the area within the Fort Hunt Park boundary and the contiguous forested area along the Parkway.

IMPACT THRESHOLDS

Negligible: There would be no observable or measurable impacts to native species, their habitats, or the natural processes sustaining them. Impacts would be well within natural fluctuations.

Minor: Impacts would be detectable, but they would not be expected to be outside the natural range of variability of native species' populations, their habitats, or the natural processes sustaining them. Mitigation measures, if needed to offset adverse effects, would be simple and successful.

Moderate: Breeding animals of concern are present; animals are present during particularly vulnerable life-stages, such as migration or juvenile stages; mortality or interference with activities necessary for survival can be expected on an occasional basis, but is not expected to threaten the continued existence of the species in the park unit. Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they could be outside the natural range of variability. Mitigation measures, if needed to offset adverse effects, would be extensive and likely successful.

Major: Impacts on native species, their habitats, or the natural processes sustaining them would be detectable, and they would be expected to be outside the natural range of variability. Key ecosystem processes might be disrupted. Loss of habitat might affect the viability of at least some native species. Extensive mitigation measures would be needed to offset any adverse effects and their success would not be guaranteed.

Duration: Short term impacts last for the duration of construction related activities, while long term impacts last beyond the proposed construction activities.

IMPACTS OF ALTERNATIVE A: NO ACTION

Under the No Action Alternative, no changes to the existing park layout would occur. No new construction or reconstruction of facilities would occur and there would be no changes in vehicle access throughout the park. Current maintenance and operation procedures would continue. There would be no disturbances to the existing wildlife habitat at Fort Hunt Park; therefore, no impacts to wildlife would result from the No Action Alternative

CUMULATIVE IMPACTS

Although other past, present, and reasonably foreseeable future actions may affect wildlife in the area, the No Action Alternative would have no impacts on wildlife and therefore would not contribute to the effects of other actions. Consequently, there would be no cumulative impacts to wildlife under the No Action Alternative.

CONCLUSION

No impacts to wildlife would result from the No Action Alternative. No cumulative impacts would result from the No Action Alternative when combined with past, present and reasonably foreseeable projects.

IMPACTS OF ALTERNATIVE B

Proposed actions under Alternative B include the removal of existing Picnic Pavilions B, C, and D, as well as Picnic and Parking Area E, and the roadway between areas E and D. Construction of a new visitor facility would take place in the former location of Pavilion B. All other removal sites would be seeded and maintained as open space. The existing loop road would continue to circulate vehicle traffic throughout the park. One lane of the loop road would be designated to the use of bicyclists and pedestrians.

Alternative B would result in small disturbances to wildlife during construction activities, including the removal of vegetation in localized areas of Fort Hunt Park. Due to the limited extents and short periods of construction, native wildlife would be able to move from disturbed areas to higher quality habitat areas nearby. Following construction, wildlife would likely return to previous locales and activities.

Under Alternative B, vegetation removal would be limited to the extent feasible. The proposed actions mostly consist of reconstruction and restoration of existing park elements. The addition of new facilities such as the visitor facility is located in areas of the Fort Hunt Park away from the shoreline and riparian forested habitat. The primary limiting factor to the bald eagle population along the Potomac River is 1) destruction of and 2) disturbance to shoreline and riparian forested habitats. These habitats are used for nesting as well as roosting and foraging. Alternative B would not impact this habitat. Other concerns for Bald Eagles include disturbance to the nesting from human noise and particularly construction activities. Construction managers would be informed of the presence of the bald eagle nearby and impacts to the bald eagle nesting site would be avoided. No construction activities would occur within the Bald Eagle protective buffer zone as defined by the USFWS. No construction is proposed within wetlands on site, or within a 100-foot buffer of wetlands, and no impacts to wetland habitat are anticipated. Due to the relatively small scale and short durations of construction activities under Alternative B, impacts would not be expected to be outside the natural range of variability of wildlife populations, habitats, or sustainability. As a result, Alternative B would result in short-term minor adverse impacts to wildlife.

Proposed actions under Alternative B include removal of existing built facilities at Fort Hunt Park. In place of existing pavilions, parking lot area, and road area, the proposed actions would establish and maintain open spaces which are likely to attract birds and small mammals. The open spaces would be suitable for species which are well adapted to human presence. The attraction of wildlife to these newly created open space habitat areas would be noticeable, resulting in beneficial impacts to wildlife.

CUMULATIVE IMPACTS

Past or reasonably foreseeable future actions occurring in the study area have affected or could affect wildlife. These projects include project activities that would have both short-term and long-term adverse impacts to wildlife from construction that would impact existing habitat for wildlife and introducing human activities causing disturbance to wildlife. Many of these projects have proposed mitigation and restrictions to construction, which would minimize long-term impacts. Implementation of Alternative B would have a short-term minor adverse impact as described in the previous section. These impacts in combination with the past, present, and reasonable foreseeable future actions would result in short and long-term minor adverse cumulative impacts in the context of the study area. Alternative B would have a very minor contribution to the cumulative impact.

CONCLUSION

Alternative B would result in short-term minor adverse impacts to wildlife during construction activities. Beneficial impacts would result from the creation of open spaces and removal of existing park structures. Short and long-term minor adverse cumulative impacts would occur to wildlife and habitat with the implementation of Alternative B.

IMPACTS OF ALTERNATIVE C (PREFERRED ALTERNATIVE)

Proposed actions under Alternative C include the removal of Pavilions B, C, and D, as well as Picnic and Parking Area E and the roadway between areas D and E. Construction of a new visitor facility would take place in the former location of Pavilion C. All other removal sites would be seeded and maintained as open space. Vehicle traffic would be confined to the northern portions of the existing loop road. The road would terminate via a turnaround at the new visitor facility. Southern portions of the existing loop road would be converted to a bicycle/pedestrian trail with removal of unnecessary impervious surface area.

Alternative C would result in small disturbances to wildlife during construction activities, including the removal of vegetation in localized areas of Fort Hunt Park. Due to the limited extents and short periods of construction, native wildlife would be able to move from disturbed areas to higher quality habitat areas nearby. Following construction, wildlife would likely return to previous locales and activities.

Under Alternative C, vegetation removal would be limited to the extent feasible. The proposed actions mostly consist of reconstruction and restoration of existing park elements. The addition of new facilities such as the visitor facility is located in areas of the Fort Hunt Park away from the shoreline and riparian forested habitat. The primary limiting factor to the bald eagle population along the Potomac River is 1) destruction of and 2) disturbance to shoreline and riparian forested habitats. These habitats are used for nesting as well as roosting and foraging. Alternative C would not impact this habitat. Other concerns for Bald Eagles include disturbance to the nesting from human noise and particularly construction activities. Construction managers would be informed of the presence of the bald eagle nearby and impacts to the bald eagle nesting site would be avoided. No construction activities would occur within the Bald Eagle protective buffer zone as defined by the USFWS. No construction is proposed within wetlands on site, or within a 100-foot buffer of wetlands, and no impacts to wetland habitat are anticipated. Due to the relatively small scale and short durations of construction activities under Alternative C, impacts would not be expected to be outside the natural range of variability of wildlife populations, habitats, or sustainability. As a result, Alternative C would result in short-term minor adverse impacts to wildlife.

Proposed actions under Alternative C include removal of existing built facilities at Fort Hunt Park. In place of existing pavilions, parking lot area, and road area, the proposed actions would establish and maintain open spaces which are likely to attract birds and small mammals. The open spaces would be suitable for species which are well adapted to human presence. The attraction of wildlife to these newly created open space habitat areas would be noticeable, resulting in beneficial impacts to wildlife.

Under Alternative C, the exiting roadway throughout the southern portion of the park would be closed to vehicles and maintained as a pedestrian/bike trail. Vehicle access would be limited to the northern portion of the park. As a result, fewer and less severe disturbances to native wildlife would occur in the existing roadway area. Therefore, beneficial impacts to wildlife would result from Alternative C.

CUMULATIVE IMPACTS

As described under Alternative B, short-term and long-term minor adverse cumulative impacts would occur because of disturbance to wildlife and their habitat from construction activities and introduction of additional human disturbances with all past, present, and reasonably foreseeable projects within the study area.

Alternative C would also provide a very minor contribution to the cumulative impact.

CONCLUSION

Alternative C would result in short-term minor adverse impacts to wildlife during construction activities. Beneficial impacts would result from the creation of open spaces and removal of existing park structures, as well as vehicle access restrictions. Short and long-term minor adverse cumulative impacts would occur to wildlife and habitat with the implementation of Alternative C.

IMPACTS OF ALTERNATIVE D

Proposed actions under Alternative D include the removal of Picnic Pavilions A, B and D, as well as Picnic and Parking Area E, and the roadway between areas E and D. Construction of a new visitor facility would take place in the former location of pavilion B. All other removal sites would be seeded and maintained as open space. Vehicle circulation at the park would be maintained through the construction of new length of road. The new road construction would extend from the pavilion C area to the new visitor facility. Southern portions of the existing loop road would be converted to a bicycle/pedestrian trail with removal of unnecessary impervious surface area.

Alternative D would result in small disturbances to wildlife during construction activities, including the removal of vegetation in localized areas of Fort Hunt Park. Due to the limited extents and short periods of construction, native wildlife would be able to move from disturbed areas to higher quality habitat areas nearby. Following construction, wildlife would likely return to previous locales and activities.

Under Alternative D, vegetation removal would be limited to the extent feasible. The proposed actions mostly consist of reconstruction and restoration of existing park elements. The addition of new facilities such as the visitor facility is located in areas of the Fort Hunt Park away from the shoreline and riparian forested habitat. The primary limiting factor to the bald eagle population along the Potomac River is 1) destruction of and 2) disturbance to shoreline and riparian forested habitats. These habitats are used for nesting as well as roosting and foraging. Alternative D would not impact this habitat. Other concerns for Bald Eagles include disturbance to the nesting from human noise and particularly construction activities. Construction managers would be informed of the presence of the bald eagle nearby and impacts to the bald eagle nesting site would be avoided. No construction activities would occur within the Bald Eagle protective buffer zone as defined by the USFWS. No construction is proposed within wetlands on site, or within a 100-foot buffer of wetlands, and no impacts to wetland habitat are anticipated. Due to the relatively small scale and short durations of construction activities under Alternative D, impacts would not be expected to be outside the natural range of variability of wildlife populations, habitats, or sustainability. As a result, Alternative D would result in short-term minor adverse impacts to wildlife.

Proposed actions under Alternative D include removal of existing built facilities at Fort Hunt Park. In place of existing pavilions, parking lot area, and road area, the proposed actions would establish and maintain open spaces which are likely to attract birds and small mammals. The open spaces would be suitable for species

which are well adapted to human presence. The attraction of wildlife to these newly created open space habitat areas would be noticeable, resulting in beneficial impacts to wildlife.

Under Alternative D, the exiting roadway throughout the southern portion of the park would be closed to vehicles and maintained as a pedestrian/bike trail. Vehicle access would be limited to the northern portion of the park. As a result, fewer and less severe disturbances to native wildlife would occur in the existing roadway area. Therefore, beneficial impacts to wildlife would result from Alternative D.

CUMULATIVE IMPACTS

As described under Alternative B, short-term and long-term minor adverse cumulative impacts would occur because of disturbance to wildlife and their habitat from construction activities and introduction of additional human disturbances with all past, present, and reasonably foreseeable projects within the study area. Alternative D would also provide a very minor contribution to the cumulative impact.

CONCLUSION

Alternative D would result in short-term minor adverse impacts to wildlife during construction activities. Beneficial impacts would result from the creation of open spaces and removal of existing park structures, as well as vehicle access restrictions. Short and long-term minor adverse cumulative impacts would occur to wildlife and habitat with the implementation of Alternative D.

CULTURAL RESOURCES

Guiding Regulations and Policies

The NHPA of 1966 governs federal agencies in their handling of historic properties. Section 106 of the Act requires that federal agencies take into account the effects of their actions on cultural resources. Under this provision, the NPS must evaluate impacts to any district, site, building, structure, or object listed in or eligible for listing in the NRHP. Cultural resources are characterized as archeological resources, historic structures, and cultural landscapes. "Historic properties" as defined by the implementing regulations of the NHPA (36 CFR 800), are any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP. This term includes artifacts, records, and the remains that are related to and located within such properties, as well as traditional and culturally significant Native American sites and historic landscapes. Agencies must consult with the SHPO and the ACHP as required, and other interested parties in an effort to avoid, minimize, or mitigate adverse effects. In addition to the NHPA, protection and management of cultural resources held by the NPS is governed by *Directors Order #28: Cultural Resources Management Guidelines* (NPS 1988), NPS Management Policies (2006).

General Methodology and Assumptions

The NPS categorizes their cultural resources as archeological resources, cultural landscapes, historic structures and districts, museum objects, and ethnographic resources. Potential impacts on historic structures and districts, cultural landscapes, and archeological resources are of concern for this project. There would be no impacts museum collections or ethnographic resources.

The analyses of effects on cultural resources that are presented in this section respond only to the requirements of NEPA. In this Environmental Assessment/Assessment of Effect, impacts to cultural resources are described

in terms of type, context, duration, and intensity, which is consistent with the regulations of the Council on Environmental Quality (CEQ) that implement the National Environmental Policy Act (NEPA). The effects to historic properties in accordance with Section 106 of NHPA will occur as individual undertakings are determined as laid out in Chapter 5 of this document.

The NPS guide for evaluating impacts, DO-12 (NPS 2001) requires that impact assessment be scientific, accurate and quantified to the extent possible. For cultural resources, it is rarely possible to measure impacts in quantifiable terms; therefore, impact thresholds must rely on the professional judgment of resource experts.

Area of Potential Effects

The APE for this undertaking has been limited to the area Fort Hunt Park boundaries. The cultural resources within the APE are described and are shown on maps in Chapter 3.

ASSESSMENT OF EFFECT

The SDP is part of the “nondestructive project planning” for these prospective undertakings, and as such does not “restrict the subsequent consideration of alternatives to avoid, minimize or mitigate [a specific] undertaking’s adverse effects on historic properties” in accordance with 36 CFR 800.1(c). Accordingly, the NPS finds that **no historic properties will be affected** by the development of the SDP in accordance with 36 CFR 800.4(d)(1). Further, the NPS commits in this document to complete the Section 106 review for each undertaking that may stem from the SDP in accordance with the Programmatic Agreement among the National Park Service, the ACHP, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008) and the ACHP’s regulations.

HISTORIC STRUCTURES OR DISTRICTS

METHODOLOGY AND ASSUMPTIONS

The analyses of impacts on historic structures and districts that are presented in this section respond to the requirements of NEPA, as previously described. Chapter 5 outlines NPS’s commitment to complete and additional assessment of individual project plans, associated with the SDP, as they are developed in more detail.

STUDY AREA

The study area for cultural resources is the APE as defined by the NPS under Section 106 regulations (see the “Cultural Resources” section in “Chapter 3: Affected Environment”). As indicated in Chapter 3, the APE for historic resources encompasses all applicable historic properties that would potentially be physically and visually affected by the proposed action. Due to the nature of the undertaking and the fact that it is internal to the park itself, the potential affects would be limited to Fort Hunt Park, its contributing resources, and the George Washington Memorial Parkway.

IMPACT THRESHOLDS

For an historic structure or district to be listed in the NRHP, it must possess significance and the features which convey its significance must have integrity. For purposes of evaluating potential impacts on historic structures and districts, the thresholds of change are defined as follows:

Negligible: The impact is at the lowest level of detection with neither adverse nor beneficial consequences.

Minor: Alteration of the patterns or features of a historic structure or district would not diminish the integrity of the character defining features or the overall integrity of the historic property.

Moderate: The project would alter the character defining features of the historic structure or district and diminish the integrity of the features of the historic property.

Major: The project would alter the character defining features of the historic structure or district and severely diminish the integrity of the features and the overall integrity of the historic property.

Duration: Short term impacts last for the duration of construction related activities, while long term impacts last beyond the proposed construction activities.

IMPACTS OF ALTERNATIVE A: NO ACTION

The increased visitor use of the park for picnicking over the past several years often overwhelms the park infrastructure and, without action, would continue to affect the park's historic structures. Under Alternative A: No Action, the last remaining NCO Quarters would exist in its present state; the inside of the building would remain closed to the public. Similarly, the Spanish-American War era batteries and Battery Commander's Station would continue to exist in their present state and would be affected by park visitors climbing on structures and normal deterioration from the natural elements such as wind, moisture, and inclement weather. Although there are no present plans and funding for comprehensive maintenance and preservation work at the NCO Quarters, CCC era structures such as the Oil Storage House, or batteries, NPS practice is to maintain and preserve cultural resources; therefore, NPS would protect the NCO Quarters or other historic structures as needed so that the character defining features or integrity of the resource would not be diminished to a level that would constitute more than a minor adverse impact. As a result, the No Action Alternative would have no impact to Historic Structures and Districts.

CUMULATIVE IMPACTS

Other past or reasonably foreseeable future actions in the study area have affected or could affect historic structures and districts within the geographic boundary for cumulative impacts. The geographic boundary for cumulative impacts has been defined as the southern portion of the GWMP and the Fort Hunt Sector of the Fairfax County Comprehensive Plan. These projects include development activities that would have long-term minor adverse impacts to structures eligible for or listed on the NRHP. Implementation of the No Action Alternative would have no impact as described in the previous analysis section. As a result there would be no cumulative impact.

CONCLUSION

The No Action Alternative would have no impact to Fort Hunt Park's historic resources. No cumulative impact would occur.

IMPACTS OF ALTERNATIVE B

One of the objectives outlined during the planning process for the Fort Hunt Park SDP is to protect cultural and natural resources at the park. Under Alternative B, the Visitor Facility would be located at Picnic Pavilion B, which is the same as location as Alternative D. The NPS oriented new facilities to minimize disturbance to

the historic landscape while also avoiding the placement of a new structure near existing historic structures at Fort Hunt Park. The Visitor Facility located at Picnic Pavilion B is at a distance from and not visible from the NCO Quarters, CCC era structures, and batteries. From the Battery Commander's Station, the Visitor Facility would only partially be visible and views would be filtered by existing vegetation. As a result of avoidance and minimization, the new visitor facility would have negligible adverse impacts on historic structures and districts because of the construction of a new facility at Fort Hunt Park (a historic site).

Under Alternative B, the NCO Quarters would undergo an undetermined future treatment following the Secretary of the Interior's Guidelines for the Treatment of Historic Properties. The NCO Quarters is a contributing resource to the cultural landscape as well as the historic district. The proposed action would reduce the structure's deterioration and retain it for future park visitors. The Spanish-American War era batteries, NCO Quarters, CCC era Oil Storage House, and Battery Commander's Station would continue to be maintained by the park; although treatments are not planned at this time. Further study would be conducted to determine the appropriate level of visitor access given to these historic features. These structures are contributing features to the historic district. Beneficial impacts would result from the future undetermined treatment of the NCO Quarters.

The enhanced interpretation planned for the site would potentially bring more visitors to the park, exposing the historic resources to additional wear and tear caused by visitors climbing and/or treading on sites, particularly the batteries. Although treatment for the batteries is not specifically identified as an action in this SDP, NPS practice is to maintain and preserve cultural resources. Therefore, NPS would protect these existing contributing resources as needed in the future to avoid diminishing the character-defining features and integrity of the resource to a level that would constitute more than a long-term minor adverse impact.

CUMULATIVE IMPACTS

Other past or reasonably foreseeable future actions in the study area have affected or could affect historic structures and districts within the geographic boundary for cumulative impacts. The geographic boundary for cumulative impacts has been defined as the southern portion of the GWMP and the Fort Hunt Sector of the Fairfax County Comprehensive Plan. These projects include development activities that would have long-term minor adverse impacts to structures eligible for or listed on the NRHP. Implementation of Alternative B would have long-term negligible adverse impacts as described in the previous analysis section. These impacts in combination with the past, present, and reasonably foreseeable future actions would result in long-term minor adverse cumulative impacts in the context of the geographic boundary. Mitigation measures would be implemented that would minimize impacts on a project by project basis as outlined in various compliance documentation. Collectively, long-term minor adverse cumulative impacts would occur. Alternative B would have a very minor contribution to the cumulative impact.

CONCLUSION

Alternative B would have long-term negligible adverse impacts to historic structures and sites because of the addition of a new Visitor Facility at Fort Hunt Park (a historic site). This action would not noticeably diminish the overall integrity of the historic resources or districts within the APE. Beneficial impacts would result from the future undetermined treatment of the NCO Quarters. Alternative B would have a very minor contribution to the long-term minor adverse cumulative impact.

IMPACTS OF ALTERNATIVE C

One of the objectives outlined during the planning process for the Fort Hunt Park SDP was to protect cultural and natural resources at the park. Under Alternative C, the Visitor Facility would be located at Picnic Pavilion C. The location is one of the primary differences separating this alternative from Alternatives B and D. The NPS oriented the new Visitor Facility to minimize disturbance to natural and archeological resources while also avoiding the placement of a new structure near existing historic structures at Fort Hunt Park. The Visitor Facility at Picnic Pavilion C is far removed from other historic structures and not visible from the NCO Quarters and batteries. From the Battery Commander's Station, the Visitor Facility would only partially be visible and views would be filtered by existing vegetation. When compared to Alternatives B and D, the Visitor Facility would be surrounded by mature forest providing a visual buffer from other historic structures such as the Battery Mount Vernon, CCC era Oil Storage House, and Battery Commander's Station. As a result of avoidance and minimization, the new visitor facility would have negligible adverse impacts on historic structures and districts because of the construction of a new facility at Fort Hunt Park (a historic site).

Under Alternative C, the NCO Quarters would undergo an undetermined future treatment following the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties*. The NCO Quarters is a contributing resource to the cultural landscape as well as the historic district. The proposed action would reduce the structure's deterioration and retain it for future park visitors. The Spanish-American War era batteries, NCO Quarters, and Battery Commander's Station would continue to be maintained by the park, although preservation work is not planned at this time. Further study would be conducted to determine the appropriate level of visitor access given to these historic features. These structures are contributing features to the historic district. Beneficial impacts would result from the future undetermined treatment of the NCO Quarters.

The enhanced interpretation planned for the site would potentially bring more visitors to the park, exposing the historic resources to additional wear and tear caused by visitors climbing and/or treading on sites, particularly the batteries. Although treatment of the batteries is not specifically identified as an action in this SDP, NPS practice is to maintain and preserve cultural resources. Therefore, NPS would protect these existing contributing resources as needed in the future to avoid diminishing the character-defining features and integrity of the resource to a level that would constitute more than a long-term minor adverse impact.

CUMULATIVE IMPACTS

Other past or reasonably foreseeable future actions in the study area have affected or could affect historic structures and districts within the geographic boundary for cumulative impacts. The geographic boundary for cumulative impacts has been defined as the southern portion of the GWMP and the Fort Hunt Sector of the Fairfax County Comprehensive Plan. These projects include development activities that would have long-term minor adverse impacts to structures eligible for or listed on the NRHP. Implementation of Alternative C would have long-term negligible adverse impacts as described in the previous analysis section. These impacts in combination with the past, present, and reasonably foreseeable future actions would result in long-term minor adverse cumulative impacts in the context of the geographic boundary. Mitigation measures would be implemented that would minimize impacts on a project by project basis as outlined in various compliance documentation. Collectively, long-term minor adverse cumulative impacts would occur. Alternative C would have a very minor contribution to the cumulative impact.

CONCLUSION

Alternative C would have long-term negligible adverse impacts because of the addition of a new non-contributing structure to the historic site. This action would not noticeably diminish the overall integrity of the historic resources or districts within the APE. Beneficial impacts would result from the future undetermined treatment of the NCO Quarters. Alternative C would have a very minor contribution to the long-term minor adverse cumulative impact.

IMPACTS OF ALTERNATIVE D

One of the objectives outlined during the planning process for the Fort Hunt Park SDP was to protect cultural and natural resources at the park. Under Alternative D, the Visitor Facility would be located at Picnic Pavilion B (which is the same as location as Alternative B). The NPS oriented new facilities to minimize ground disturbance while avoiding the placement of a new structure near existing historic structures at Fort Hunt Park. The visitor facility located at Picnic Pavilion B is away from and not visible from the NCO Quarters, CCC era Oil Storage House, and most batteries. From the Battery Commander's Station, the visitor facility would only partially be visible and views would be filtered by existing vegetation. One of the primary differences between Alternative D and other alternatives is the removal of Picnic Pavilion A. Removal of Picnic Pavilion A would remove a nonconforming structure from the landscape and viewshed of other historic structures such as the NCO Quarters. Also, elimination of largest permitting picnicking area (Area A) would create a better balance of visitor use, which in turn adds to resource protection by reducing overuse. As a result of avoidance and minimization, the new visitor facility would have negligible adverse impacts on historic structures and districts because of the construction of a new facility at Fort Hunt Park (a historic site). The removal of Picnic Pavilion A would have beneficial impacts to historic structures by removing a non-contributing structure from the landscape.

Under Alternative D, the NCO Quarters would undergo an undetermined future treatment following the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties*. The NCO Quarters is a contributing resource to the cultural landscape as well as the historic district. The proposed action would reduce the structure's deterioration and retain it for future park visitors. The Spanish-American War era batteries, Battery Commander's Station, CCC era Oil Storage House, and NCO Quarters would continue to be maintained by the park, although preservation work is not planned at this time. Further study would be conducted to determine the appropriate level of visitor access given to these historic features. These structures are contributing features to the historic district. Beneficial impacts would result from the future undetermined treatment of the NCO Quarters.

The enhanced interpretation planned for the site would potentially bring more visitors to the park, exposing the historic resources to additional wear and tear caused by visitors climbing and/or treading on sites, particularly the batteries. Although treatment of the batteries is not specifically identified as action in this SDP, NPS practice is to maintain and preserve cultural resources. Therefore, NPS would protect these existing contributing resources as needed in the future to avoid diminishing the character-defining features and integrity of the resource to a level that would constitute more than a long-term minor adverse impact.

CUMULATIVE IMPACTS

Other past or reasonably foreseeable future actions in the study area have affected or could affect historic structures and districts within the geographic boundary for cumulative impacts. The geographic boundary for

cumulative impacts has been defined as the southern portion of the GWMP and the Fort Hunt Sector of the Fairfax County Comprehensive Plan. These projects include development activities that would have long-term minor adverse impacts to structures eligible for or listed on the NRHP. Implementation of Alternative D would have long-term beneficial impacts from the removal of Picnic Pavilion A and a long-term negligible adverse impact from the addition of the visitor facility on a historic site, as described in the previous analysis section. These impacts in combination with the past, present, and reasonably foreseeable future actions would result in long-term minor adverse cumulative impacts in the context of the geographic boundary. Mitigation measures would be implemented that would minimize impacts on a project by project basis as outlined in various compliance documentation. Collectively, long-term minor adverse cumulative impacts would occur. Alternative D would have a very minor contribution to the cumulative impact.

CONCLUSION

Alternative D would have long-term beneficial impacts from the removal of Picnic Pavilion A and a long-term negligible adverse impact from the addition of the visitor facility on a historic site. Overall, Alternative D would not noticeably diminish the overall integrity of the historic resources or districts within the APE. Beneficial impacts would result from the future undetermined treatment of the NCO Quarters. Alternative D would have a very minor contribution to the long-term minor adverse cumulative impact.

CULTURAL LANDSCAPES

METHODOLOGY AND ASSUMPTIONS

Cultural landscapes, as defined by The Secretary of the Interior's *Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*, consist of "a geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values." The proposed alternatives have the potential to affect, directly or indirectly, one individually significant cultural landscape: Fort Hunt Park. There are no identified component landscapes within Fort Hunt Park. A CLI was completed by the NPS for Fort Hunt Park in 2001 (revised in 2004). The cultural landscape's contributing resources identified by the CLI are detailed in Chapter 3.

The analyses of impacts on cultural resources that are presented in this section respond to the requirements of NEPA and Section 106 of the NHPA, as previously described. Chapter 5 outlines NPS's commitment to complete and additional assessment of individual project plans, associated with the SDP, as they are developed in more detail. In some cases, restoring a historical land use such as recreation is a beneficial impact to the cultural landscape as the case with the SDP and this described in the visitor use and experience analysis.

STUDY AREA

The study area is the boundary of the cultural landscape as defined in the CLI and described in Chapter 3 Cultural Landscape section and is similar to the APE for the project.

IMPACT THRESHOLDS

For a cultural landscape to be listed in the NRHP, it must possess significance and the features which convey its significance must have integrity. For purposes of evaluating potential impacts on cultural landscapes, the thresholds of change are defined as follows:

Negligible: The impact is at the lowest level of detection with neither adverse nor beneficial consequences.

Minor: Alteration of the patterns or features of a cultural landscape would not diminish the integrity of the character defining features or the overall integrity of the historic property.

Moderate: The project would alter the character defining features of the cultural landscape and diminish the integrity of the features of the historic property.

Major: The project would alter the character defining features of the cultural landscape and severely diminish the integrity of the features and the overall integrity of the historic property.

Duration: Short term impacts last for the duration of construction related activities, while long term impacts last beyond the proposed construction activities.

IMPACTS OF ALTERNATIVE A: NO ACTION

The increased visitor use of the park for picnicking over the past several years often overwhelms the park infrastructure and, without action, would slowly cause the deterioration of the park grounds and historic structures. Under Alternative A: No Action, the last remaining NCO Quarters would exist in its present state and the inside of the building would be closed to the public. Similarly, the Spanish-American War era batteries and Battery Commander's Station would continue to exist in its present state and would be affected by park visitors climbing on structures and normal deterioration from the natural elements such as wind, moisture, and inclement weather. Although there are no present plans and funding for comprehensive maintenance and preservation work at the NCO Quarters or batteries, NPS practice is to maintain and preserve cultural resources, therefore, NPS would protect the NCO Quarters or other historic structures as needed so that the character defining features or integrity of the resource would not be diminished to a level that would constitute more than a minor adverse impact. The spatial organization, vegetation, and circulation patterns that contribute to the cultural landscape would not change.

Overall, the No Action Alternative would have a long-term minor adverse impact to Fort Hunt Park's cultural landscape because contributing historic resources would continue to deteriorate due to wear and tear caused by visitors and natural elements.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions have or could have adverse cumulative impacts to cultural landscape in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of GWMP and the area surrounding Fort Hunt. The past, present, and future projects described in the cumulative impact scenario would have long-term minor adverse impacts. The No Action Alternative would have long-term minor adverse impacts on cultural landscapes and therefore would contribute to the effects of other actions, although the contribution would be minor.

CONCLUSION

Under the No Action Alternative, the NPS practice is to maintain and preserve cultural resources. The No Action Alternative would have long-term minor adverse impacts caused by wear and tear from visitor use and natural elements. The No Action Alternative would have long-term minor cumulative impacts to cultural landscapes

IMPACTS OF ALTERNATIVE B

All work proposed under Alternative B would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* and the *Guidelines for the Treatment of Cultural Landscapes* in order to avoid and/or minimize any adverse impacts. Further consultation with the VA SHPO would occur as project plans are further refined.

Alternative B proposes to construct the visitor facility at the current site of Picnic Pavilion B. This action would require the removal of two noncontributing features – Picnic Pavilion B and the adjacent ball field. The visitor facility would be constructed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* in order to avoid and/or minimize any adverse effects and the design would be appropriate for the park context. Depending on the final size and configuration of the visitor facility, the action has the potential to obstruct views to the woodland border around the perimeter of the park, which is a contributing landscape feature. Due to the localized nature of this action, the effect on the views would be limited, and would not diminish the overall integrity of the cultural landscape.

With all Action Alternatives, the entrance road to Fort Hunt Park would be realigned to follow the historic military alignment, creating a perpendicular intersection with Fort Hunt Road. This historic military alignment is a contributing circulation feature of the cultural landscape. This action would allow visitors to experience the historic entrance route and would enhance interpretation of the park's history. The realignment of the entrance road would not have an impact on the Fort Hunt Overpass because the vegetation and road configuration would obstruct views between the two locations. Under all Action Alternatives, the lower portion of the main park loop road between existing Picnic Pavilion D and Picnic Area E would be removed, due to their proximity to a WWII prisoner encampment area. The roadway would be maintained as open space. According to the CLI, this area possesses the potential for archeological significance.

Under Alternative B, vehicular circulation would follow the existing loop portion of the Fort Hunt Park Access Roads around the perimeter of the park. This loop road would provide access to the proposed visitor facility and would continue to provide access to the maintenance and park police facilities. This main road was built between 1963 and 1964 – outside of the period of significance for the park – and therefore is not a contributing feature of the landscape. The paved loop road around Picnic Area E in the southwest corner of the park is currently closed to visitors. Alternative B proposes to reopen this road to pedestrian and vehicular traffic. Reestablishing visitor use of this road would maintain an historic land use for Fort Hunt Park.

Alternative B would have minor modifications to vehicular circulation by using the existing loop road through the northern portion of the park, and would provide visitors continued access to the site. Alternative B would continue to use the lower loop road – currently closed – south of Picnic Area E for vehicles, retaining the existing amount of surface paving.

Under Alternative B, as well as all of the Action Alternatives, a new interpretive trail system would originate from the visitor facility and progress chronologically through the park. While additional studies need to be completed to determine the final design and materials of the trail, it would likely be covered in asphalt or concrete for accessibility and maintenance reasons. Although the trail system would introduce additional paving within the APE, the action would not alter the character-defining features or significantly diminish the overall integrity of the cultural landscape. All contributing landscape features would be avoided in constructing the trail system; and the historic open spaces, including the parade ground, would be maintained. The interpretive trail system would provide a formal circulation path that may help to minimize the creation of social paths and thus the deterioration of the cultural landscape.

Under Alternative B, permitted picnicking would be limited to Picnic Pavilion A. Picnic Pavilions/Areas C, D, and E would be removed. According to the CLI, all of the picnic areas are noncontributing features to the cultural landscape and were built outside of the period of significance. The removal and seeding with grass or appropriate vegetation treatment of the Picnic Area D would reestablish open space within the cultural landscape. A 1906 map of Fort Hunt Park indicates this space was historically open and the CLI identified open fields as contributing features of the landscape. While picnic areas C and E would be maintained as open space or another vegetation treatment, the 1906 map indicates these areas were occupied by an orchard and woodland respectively. Removing the picnic shelters would open additional views to the perimeter woodland, a contributing feature of the cultural landscape.

Alternative B would introduce additional recreational opportunities by designating a bicycle/pedestrian lane on the two-lane loop road. From the park entrance to the visitor facility parking lot, where the road would accommodate two-way vehicular traffic, the road would be widened to accommodate the trail, which would be striped and signed to separate trail users from vehicular traffic. As stated above, the loop road is a noncontributing feature of the landscape. Although the widening of the loop road would introduce additional paving within the APE, the action would not alter the character-defining features or significantly diminish the overall integrity of the cultural landscape.

The proposed visitor facility would be located in the current location of Picnic Pavilion B, an existing open space. This location would impact views to the perimeter woodland. The intensity of this impact would depend on the final size and design of the facility.

Opportunities for recreation would be slightly decreased when compared to the other Action Alternatives. Alternative B would offer a minimum amount of dedicated pedestrian/biking paths, and on both the northern and southern portion of the loop road the pedestrian/bike path would be shared with vehicular traffic. This would increase the amount of pavement within the APE by widening the north section of the loop road to accommodate two-way traffic and a dedicated pedestrian/bicycle lane. Alternative B would retain only one ball field (near Picnic Pavilion A).

Under all Action Alternatives, the NCO Quarters would receive an undetermined treatment according to the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties*. The NCO Quarters is a contributing resource to the cultural landscape as well as the historic district. The proposed action would reduce the structure's deterioration and would enhance interpretation at the park. The commemorative planting near the NCO Quarters would not be impacted.

The Spanish-American War era batteries and Battery Commander's Station would continue to be maintained by the park; however preservation work is not planned at this time. These structures are contributing features

to the cultural landscape as well as the historic district. The enhanced interpretation planned for the site would potentially bring more visitors to the park, exposing the historic resources to additional wear and tear caused by visitors climbing and/or treading on sites, particularly the batteries.

Overall, the combined impacts of all categories under Alternative B would not significantly diminish the overall integrity of the cultural landscapes within the APE. As a result, Alternative B would have long-term minor adverse impacts due to the introduction of the visitor facility, interpretive trails and other site improvements. Alternative B would also have beneficial impacts to Fort Hunt Park's cultural landscape from the removal of non-contributing structures, reestablishment of some of the historic circulation patterns, and protection of landscape features.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions have or could have adverse cumulative impacts to cultural landscape in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of GWMP and the area surrounding Fort Hunt. The past, present, and future projects described in the cumulative impact scenario would have long-term minor adverse impacts. Alternative B would have long-term minor adverse impacts on cultural landscapes and therefore would contribute to the effects of other actions although the contribution would be minor. Collectively, there would be long-term minor adverse cumulative impacts to cultural landscapes under Alternative B.

CONCLUSION

Overall, the combined impacts of all categories under Alternative B would be minor and would not significantly diminish the spatial organization, vegetation, circulation patterns or other aspects of the cultural landscapes within the APE. Alternative B would have long-term minor adverse impacts due to the introduction of the visitor facility, interpretive trails, and other site improvements. Alternative B would also have beneficial impacts to Fort Hunt Park's cultural landscape from the removal of non-contributing structures, reestablishment of some of the historic circulation patterns, and protection of landscape features. Alternative B, along with past, present, and reasonably foreseeable future actions, would result in a long-term minor adverse cumulative impacts to cultural landscapes.

IMPACTS OF ALTERNATIVE C (PREFERRED ALTERNATIVE)

All work proposed under Alternative C would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* in order to avoid and/or minimize any adverse impacts.

Alternative C proposes to construct the visitor facility at the current site of Picnic Pavilion C. This action would require the removal of Picnic Pavilion C, a noncontributing feature of the cultural landscape. The proposed building would be located within the existing woodlands, which is a contributing landscape feature to Fort Hunt Park. Construction of the visitor facility would avoid damage to the existing trees and would retain the woodland's sense of density without significantly diminishing the integrity of the resource. Depending on the final size and configuration of the visitor facility, the action has the potential to alter and obstruct views to the woodland border around the perimeter of the park. Due to the localized nature of this action, the effect on the views and the woodland would be limited, and would not diminish the overall integrity of the cultural landscape. Under Alternative C, the proposed visitor facility would be sited in the existing woodlands in Area C. This location would have the potential to alter and obstruct views to the woodland perimeter of the park;

however, this impact would be minimized due to the wooded setting surrounding the proposed visitor facility site. The intensity of this impact would depend on the final size and design of the facility.

As with Alternative B, the entrance road to Fort Hunt Park would be realigned to follow the historic military alignment. Additionally, the lower portion of the main park loop road between existing Picnic Pavilion D and Picnic Area E would be removed.

Under Alternative C, vehicular circulation would be limited to the northern portion of the existing loop road and would follow the current alignment from the park entrance, terminating in a turn-around in Parking Lot C at the site of the proposed visitor facility. The paved loop road around Picnic Area E would be converted to a pedestrian/bike path. Alternative C would have minor modifications to vehicular circulation by using the existing loop road through the northern portion of the park, and would provide a beneficial impact in providing visitors continued access to the site. Because Alternative C would not utilize the lower portion of the loop road for vehicular traffic, the amount of surface pavement in through the southern portion of the park would be reduced. As with all of the Action Alternatives, a new interpretive trail system would originate from the visitor facility and progress chronologically through the park.

Under Alternative C, permitted picnicking would be limited to Picnic Pavilion A and Picnic Areas B, C, D, and E would be removed. The removal of the Picnic Areas B and D would reestablish open space within the cultural landscape and remove non-contributing structures from the cultural landscape.

Alternative C would introduce additional recreational opportunities by creating a bicycle/pedestrian trail within the existing road alignment of the unused southern loop road that would continue as a separate recreational trail around the northern portion of the park, traveling behind the park police and paddocks, paralleling the main loop road. The roadway along the southern loop road would be reduced by 50 percent. Reducing the amount of pavement within throughout the southern portion of the loop road would enhance the overall integrity of the woodlands, a contributing feature of the cultural landscape. However, continuing the trail through the northern portion of the woodlands would introduce additional paving in areas where paving did not previously exist. While there would be some loss of trees, the action would limit damage to the existing trees and would retain the woodland's sense of density. The insertion of a northern pedestrian/bicycle trail would not alter the character-defining features or significantly diminish the overall integrity of the cultural landscape.

Alternative C would create a dedicated pedestrian/bicycle path around the park. The adverse impact of the additional surface pavement within the APE would be offset by the beneficial impact of the improved recreational opportunities at the park. Alternative C would also retain two ball fields (in Areas A and B).

Under all Action Alternatives, the NCO Quarters would receive an undetermined treatment according to the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties*. The NCO Quarters is a contributing resource to the cultural landscape as well as the historic district. The proposed action would reduce the structure's deterioration and would enhance interpretation at the park. The commemorative planting near the NCO Quarters would not be impacted.

The Spanish-American War era batteries and Battery Commander's Station would continue to be maintained by the park; however preservation work is not planned at this time. These structures are contributing features to the cultural landscape as well as the historic district. The enhanced interpretation planned for the site would potentially bring more visitors to the park, exposing the historic resources to additional wear and tear caused by visitors climbing and/or treading on sites, particularly the batteries.

Alternative C would have long-term minor adverse impacts due to the introduction of the visitor facility, recreational trails through the forested area and other site improvements. Alternative C would also have beneficial impacts to Fort Hunt Park's cultural landscape from the removal of noncontributing structures, reestablishment of some of the historic circulation patterns, and protection of landscape features.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions have or could have adverse cumulative impacts to cultural landscape in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of GWMP and the area surrounding Fort Hunt. The past, present, and future projects described in the cumulative impact scenario would have long-term minor adverse impacts. Alternative C would have long-term minor adverse impacts as well as beneficial impacts on cultural landscapes and therefore would contribute to the effects of other actions, although the contribution would be minor.

CONCLUSION

Overall, the combined impacts of all categories under Alternative C would be minor and would not significantly diminish the spatial organization, vegetation, circulation patterns, or other aspects of the cultural landscapes within the APE. Alternative C would have long-term minor adverse impacts due to the introduction of the visitor facility, recreational trails through forested area, and other site improvements. Alternative C would also have beneficial impacts to Fort Hunt Park's cultural landscape from the removal of noncontributing structures, reestablishment of some of the historic circulation patterns, and protection of landscape features. Alternative C, along with past, present, and reasonably foreseeable future actions, would have long-term minor adverse cumulative impacts to cultural landscapes.

IMPACTS OF ALTERNATIVE D

All work proposed under Alternative D would be completed in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties* in order to avoid and/or minimize any adverse impacts.

Alternative D proposes to construct the visitor facility at the current site of Picnic Pavilion B. This action would require the removal of two noncontributing features – Picnic Pavilion B and the adjacent ball field. Depending on the final size and configuration of the visitor facility, the action has the potential to obstruct views to the woodland border around the perimeter of the park, which is a contributing landscape feature. Due to the localized nature of this action, the effect on the views would be limited, and would not diminish the overall integrity of the cultural landscape.

Under Alternative D, as well as all Action Alternatives, the entrance road to Fort Hunt Park would be realigned to follow the historic military alignment. Additionally, the lower portion of the main park loop road between existing Picnic Pavilion D and Picnic Area E would be removed. Under Alternative D, vehicular circulation would continue along the northern portion of the park loop road while a smaller loop would circle the general location of the proposed visitor facility, with the eastern alignment of the loop roadway following the existing maintenance road that runs north-south through the upper portions of the park open space. The southern and eastern portions of the existing loop road would be closed to vehicular traffic and converted to a bicycle/pedestrian trail. The proposed north-south road segment of the road would be roughly aligned with the existing dirt and gravel maintenance road. According to the CLL, it is not clear whether this road was placed on an existing historic roadbed; however, a route in this location was utilized during the WWII era. The proposed

north-south portion of the road would be wider than the existing maintenance road to accommodate vehicular traffic, and would not follow the existing curvilinear alignment, adding additional pavement to the cultural landscape.

The paved loop road around picnic Area E in the southwest corner of the park is currently closed to visitors. Alternative D proposes to reopen this road and convert it to a walking/biking path. Reestablishing visitor use of this road would enhance recreation opportunities and would maintain an historic land use for Fort Hunt Park.

Alternative D would require modifications to existing vehicular circulation by introducing a new north-south road segment through the northern portion of the park. While the additional pavement would result in an adverse impact, there would be a beneficial impact created from engaging the public with the historic military alignment, even if the route is not identical. Alternative D would not utilize the lower portion of the loop road for vehicular traffic; therefore, the amount of surface pavement in the southern portion of the project area would be reduced.

As with all of the Action Alternatives, a new interpretive trail system would originate from the visitor facility and progress chronologically through the park.

Under Alternative D, permitted picnicking would be limited to Picnic Pavilion and Area C; Picnic Pavilions/Areas A, B, D, and E would be removed. The removal and seeding of the Picnic Pavilions/Areas D and E would reestablish open space within the cultural landscape. Picnic Pavilion B is the site of the proposed visitor facility. In the vicinity of Picnic Pavilion A an archeological test pit executed in the early 1990s yielded significant remains at this location; however, the CLI does not consider this a contributing archeological site due to the lack of extensive research. Removal of the noncontributing resources would be a beneficial impact to the cultural landscape by opening up historical open space and reestablishing views.

Alternative D would introduce additional recreational opportunities by creating a bicycle/pedestrian trail within the existing road alignment of the unused southern loop road that would continue as a separate recreational trail around the northern portion of the park, traveling behind the park police and paddocks, paralleling the main loop road. The roadway along the southern loop road would be reduced by 50 percent, and the areas where asphalt is removed would be reestablished with native vegetation. Reducing the amount of pavement within the southern portion of the park would enhance the overall integrity of the woodlands, a contributing feature of the cultural landscape. The continuation of the trail through the northern portion of the woodlands parallel to the existing loop road would introduce additional paving in areas where paving did not previously exist. While there would be some loss of trees, the action would limit damage to the existing trees and would retain the woodland's sense of density. The insertion of a northern pedestrian trail would not alter the character-defining features or significantly diminish the overall integrity of the cultural landscape.

Alternative D would remove Picnic Pavilion A. Although the pavilion is a noncontributing feature, it is the park's largest pavilion and therefore can accommodate the most visitors. The removal of this pavilion would potentially have an adverse impact by discouraging visitor use and recreation, which is a contributing land use feature; however, by removing this land use, the NPS is offering added protection to nearby historic resources. Removing the southern and eastern portions of the existing loop road would create a dedicated pedestrian/bicycle path around the park. The adverse impact of the additional surface pavement within the APE would be offset by the beneficial impact of the improved recreational opportunities at the park. Alternative D would retain only one ball field (in Area A).

Under all Action Alternatives, the NCO Quarters would receive an undetermined treatment according to the *Secretary of the Interior's Guidelines for the Treatment of Historic Properties*. The NCO Quarters is a contributing resource to the cultural landscape as well as the historic district. The proposed action would reduce the structure's deterioration and would enhance interpretation at the park. The commemorative planting near the NCO Quarters would not be impacted.

The Spanish-American War era batteries and Battery Commander's Station would continue to be maintained by the park; however preservation work is not planned at this time. These structures are contributing features to the cultural landscape as well as the historic district. The enhanced interpretation planned for the site would potentially bring more visitors to the park, exposing the historic resources to additional wear and tear caused by visitors climbing and/or treading on sites, particularly the batteries.

Alternative D would have long-term minor adverse impacts due to the introduction of the visitor facility, recreational trails through forested area and other site facility improvements. Alternative D would also have beneficial impacts to Fort Hunt Park's cultural landscape from the removal of noncontributing structures, creating a better balance between visitor use and resource protection, reestablishment of some of the historic circulation patterns, and protection of landscape features.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions have or could have adverse cumulative impacts to cultural landscape in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of GWMP and the area surrounding Fort Hunt. The past, present, and future projects described in the cumulative impact scenario would have long-term minor adverse impacts. Alternative D would have long-term minor adverse impacts as well as beneficial impacts on cultural landscapes and therefore would contribute to the effects of other actions, although the contribution would be minor.

CONCLUSION

Overall, the combined impacts of all the actions under Alternative D would be modest and would not significantly diminish the overall integrity of the historic resources or cultural landscapes within the APE. As a result, Alternative D would have long-term minor adverse impacts as well as beneficial impacts to Fort Hunt Park's cultural landscape. Other past, present, and reasonably foreseeable future actions have or could have cumulative impacts to cultural landscape in the geographic boundaries. Alternative D would have long-term minor adverse impacts on cultural landscapes and therefore would contribute to the effects of other actions although the contribution would be minor. Consequently, there would be long-term minor adverse cumulative impacts to cultural landscapes under Alternative D.

ARCHEOLOGICAL RESOURCES

METHODOLOGY AND ASSUMPTIONS

DO-28 (NPS 1998) directs the NPS to protect and manage cultural resources in its custody through effective research, planning, and stewardship and management policy (NPS 2006b) requires the NPS to endeavor to protect cultural resources against overuse, deterioration, environmental impacts, and other threats without compromising the integrity of cultural resources. The NPS intends, to the extent feasible, to locate new construction in areas previously disturbed that have undergone archaeological survey. For construction in areas not previously fully surveyed for archaeological resources, archaeological investigations would be

conducted prior to land disturbance. In order to evaluate potential impacts to archeological resources, available information on the nature of previously conducted archaeological surveys and the nature and location of previously identified archaeological sites potentially impacted by the proposed alternatives was compiled. Sources include NPS cultural resources managers and the VDHR's *Data Sharing System (DSS)* as well as associated reports and site forms.

The analyses of impacts on archeology that are presented in this section respond to the requirements of NEPA and Section 106 of the NHPA. Chapter 5 outlines NPS's commitment to complete and additional assessment of individual project plans, associated with the SDP, as they are developed in more detail.

STUDY AREA

The study area for archeological resources includes those areas identified in the No Action and Action alternatives at which ground-disturbing actions would be undertaken if selected.

IMPACT THRESHOLDS

Impacts to archeological sites occur when proposed alternatives result in complete or partial destruction of the resource, and are equivalent to a loss of integrity as defined in Section 106 of NHPA. In determining the appropriate impact threshold, both the extent to which the proposed alternative results in a loss of integrity and the degree to which losses can be compensated by mitigating activities, including preservation or data recovery, are considered. Only those resources considered significant for listing in the NRHP are protected by federal regulations. Resources are eligible for listing in the NRHP if they meet one or more eligibility criteria (for archeological sites, generally Criterion D, having the potential to provide information important to history or prehistory) and if they possess integrity.

For the analysis of impacts to archeological resources, the determination of the intensity of an impact is based on the foreseeable loss of integrity to known or potential resources. The analysis considers only the direct impacts of construction-related activities as the facility should have no ground-disturbing activities and no additional effects upon archeological resources under any of the alternatives under consideration upon completion of construction. However, all impacts are considered long term, in that the impact to an archeological resource would last past the period of construction. The definition of impact thresholds used in this analysis are:

Negligible: The lowest level of detection that would have neither adverse nor beneficial impacts.

Minor: Disturbance of archeological resources would result in little, if any, loss of site integrity.

Moderate: Site disturbance would result in a loss of integrity and a partial loss of the character-defining features and information potential that form the basis of the site's NRHP eligibility. Mitigation is accomplished by a combination of archeological data recovery and in-place preservation.

Major: The disturbances result in a loss of site integrity to the extent that the resource is no longer eligible for listing in the NRHP. The site's character-defining features and information potential are lost to the extent that archeological data recovery is the primary form of mitigation.

Beneficial: Beneficial impacts can occur when an archeological site is stabilized in its current condition to maintain its existing level of integrity or when an archeological site is preserved in accordance with the *Secretary of Interior's Standards for the Treatment of Historic Properties* (NPS 1992).

Duration: Short-term impacts last for the duration of construction-related activities while long-term impacts last beyond the proposed construction activities and are permanent. All impacts to archeological sites are considered long-term impacts.

IMPACTS OF NO ACTION ALTERNATIVE

Under the No Action Alternative, no changes to the existing park layout would occur. No new construction or reconstruction of facilities would take place, and there would be no changes in vehicle access throughout the park. Current maintenance and operation procedures would continue. There would be no disturbances to archeological resources at Fort Hunt Park from these activities.

High levels of visitor use during peak periods increases the likelihood of erosion caused by social trails. Furthermore, stormwater runoff from roads, parking lots, and pavilions has the potential to impact known or potential archeological resources at Fort Hunt Park. Archeological resources can be right at or just below ground surface and could be damaged by erosion. Such erosion could also uncover artifacts and would increase the potential for illegal artifact collecting. The No Action Alternative would have a long-term minor adverse impact on archeological resources at Fort Hunt Park because of high levels of visitor use and erosion in areas that support potential archeological resources just below the ground surface.

CUMULATIVE IMPACTS

Other past, present, or reasonably foreseeable future projects including past archeological testing at Fort Hunt Park have or have the potential to have impacts archeological resources from ground disturbance activities in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of the GWMP and the Fort Hunt area. Long-term minor adverse impacts to archeological sites are expected as a result of the No Action Alternative as described in the analysis section. Collectively, the long-term minor adverse cumulative impact would occur with the No Action Alternative adding a very small increment to the cumulative impact.

CONCLUSION

Implementation of the No Action Alternative would have long-term minor adverse impacts because of high levels of visitor use and stormwater runoff causing erosion, which could expose archeological resources. A long-term minor adverse cumulative impact would occur to archeological resources under the No Action Alternative.

IMPACTS OF ALTERNATIVE B

Under Alternative B, removal of the Picnic and Parking Area E would potentially impact archeological resources in the vicinity. Additionally, removal of the roadway between Areas D and E could result in minor impacts to archeological features. Construction of new trails would also have the potential to impact archeological resources. However, most areas of ground disturbance associated with Alternative B have not been surveyed, or comprehensively surveyed, for the presence of archeological resources and additional survey is needed. Removal of Picnic Pavilions B, C, and D is of an anticipated limited amount of ground disturbance

that suggests that impacts to potential archeological resources would be minor and would generally involve the disturbance of near-surface deposits.

Construction of a new visitor facility and associated infrastructure, such as water, sewer, and electricity, at Pavilion B would be associated with an increased level of ground disturbance. Impacts of this construction on archeological resources could range from minor to moderate depending on the nature of the potential archeological resources. Prior to construction of a visitor facility at Pavilion B, the realignment of the entrance road, the removal of existing Picnic Pavilions B and C, as well as Picnic and Parking Areas D and E, and the roadway between areas E and D, the NPS would conduct an archeological survey to identify and evaluate for listing in the NRHP archeological resources within the construction limit of disturbance. Further consultation with the Virginia SHPO would also occur. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources.

Other actions under Alternative B such as closing a portion of the Loop Road between Area C and Area D and removing certain pavilions facilities would have a beneficial impact because they would remove high levels of recreational use near known resources and stabilize potential archeological areas. These actions would reduce erosion-causing activities as well as artifact hunting from these areas. Soil stabilization from vegetation and the designated interpretive trail networks could have also have a beneficial impact if these undertaking prevent erosion.

Under Alternative B, individual projects would include an archeological survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources. Because impacts to archeological sites would be avoided, minimized, or mitigated, the implementation of the actions under Alternative B has the potential to result in minor to moderate long-term adverse impacts to archeological resources. Beneficial impacts would also occur from the closure of the road in areas of high archeological resources, soil stabilization and designated interpretative trails reducing social trails.

CUMULATIVE IMPACTS

Other past, present, or reasonably foreseeable future projects including past archeological testing at Fort Hunt Park have the potential to impact archeological resources because of ground disturbance for development activities. The geographic boundary for cumulative impacts was defined as the southern portion of GWMP and the Mount Vernon area. Identification, evaluation, and avoidance, minimization, or mitigation of archeological resources at Fort Hunt Park would result in minor to moderate long-term adverse impacts to archeological resources as described in the analysis section. Collectively, Alternative B would have long-term minor adverse cumulative impacts on archeology and would add a minor increment to the cumulative impact.

CONCLUSION

Under Alternative B, individual projects would include an archeological survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources. Because impacts to archeological sites would be avoided, minimized, or mitigated, the implementation of the actions under Alternative B has the potential to result in minor to moderate long-term adverse impacts to archeological resources. Beneficial impacts would also occur from the closure of the road in

areas of high archeological resources, soil stabilization and designated interpretative trails reducing social trails. Alternative C would have a long-term minor adverse cumulative impact to archeological resources.

IMPACTS OF ALTERNATIVE C (PREFERRED ALTERNATIVE)

Proposed actions under Alternative C include the removal of Pavilions B, C, and D, Picnic and Parking Area E, and Parking Area D. Construction of a new visitor facility would take place in the former location of Pavilion C. Construction of new trails would also have the potential to impact archeological resources. All other removal sites would be maintained as open space. Vehicle traffic would be confined to the northern portions of the existing loop road. The road would terminate via a turnaround at the new visitor facility. Southern portions of the existing loop road would be converted to a bicycle/pedestrian trail with removal of unnecessary impervious surface area.

Under Alternative C, removal of the Picnic and Parking Area E would potentially impact archeological resources in the vicinity. Additionally, removal of the roadway between Areas D and E could result in minor impacts to archeological features. However, most areas of ground disturbance associated with Alternative C have not been surveyed, or comprehensively surveyed, for the presence of archeological resources and additional survey is needed. The removal of Picnic Pavilions B, C, and D, and Parking Area D would be of restricted ground disturbance. Impacts to potential archeological resources would be minor and would generally involve the disturbance of near-surface deposits. Construction of a new visitor facility and associated infrastructure, such as an access road, water, sewer, and electricity, at Pavilion C would be associated with an increased level of ground disturbance. Impacts of this construction on archeological resources could range from minor to moderate depending on the nature of the potential archeological resources.

Prior to construction of a visitor facility at Pavilion C, the removal of Pavilions B, C, and D, Picnic and Parking Area E, and Parking Area D and the associated ball field removals, the NPS would conduct an archeological survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources. Under Alternative C, individual projects would include an archeological survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources. Because impacts to archeological sites would be avoided, minimized, or mitigated, the implementation of the actions under Alternative C has the potential to result in minor to moderate long-term adverse impacts to archeological resources.

Other actions under Alternative C such as closing a portion of the Loop Road between Area C and Area D and removing certain pavilions facilities would have a beneficial impact because they would remove high levels of recreational use near known resources and stabilize potential archeological areas. These actions would reduce erosion-causing activities as well as artifact hunting from these areas. Soil stabilization from vegetation and the designated interpretive trail networks could have a beneficial impact if these undertaking prevent erosion.

Under Alternative C, individual projects would include an archeological survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources. Because impacts to archeological sites would be avoided, minimized, or mitigated, the

implementation of the actions under Alternative C has the potential to result in minor to moderate long-term adverse impacts to archeological resources. Beneficial impacts would also occur from the closure of the road in areas of high archeological resources, soil stabilization and designated interpretative trails reducing social trails.

CUMULATIVE IMPACTS

The cumulative impacts for Alternative C would be the same as those described in Alternative B. Alternative C would result in minor to moderate long-term adverse impacts to archeological resources. Collectively, Alternative C would have long-term minor adverse cumulative impacts on archeology and would add a minor increment to the cumulative impact.

CONCLUSION

Under Alternative C, individual projects would include an archeological survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources. Because impacts to archeological sites would be avoided, minimized, or mitigated, the implementation of the actions under Alternative C has the potential to result in minor to moderate long-term adverse impacts to archeological resources. Beneficial impacts would also occur from the closure of the road in areas of high archeological resources, soil stabilization and designated interpretative trails reducing social trails. Alternative C would have a long-term minor adverse cumulative impact to archeological resources.

IMPACTS OF ALTERNATIVE D

Proposed actions under Alternative D include the removal of Picnic Pavilions A, B and D, Picnic and Parking Area E, and Parking Area D. Construction of a new visitor facility would take place in the former location of Pavilion B. Construction of new trails would also have the potential to impact archeological resources. All other removal sites would be seeded and maintained as open space. Vehicle circulation at the park would be maintained through the construction of new length of road. The new road construction would extend from the Pavilion C area to the new visitor facility. Southern portions of the existing loop road would be converted to a bicycle/pedestrian trail with removal of unnecessary impervious surface area.

Under Alternative D, removal of the Picnic and Parking Area E would have negligible impact upon archeological resources associated with WWII Enclosure A based upon the results of geophysical testing and the location of the existing facilities in relation to the enclosure fences and building location. However, most areas of ground disturbance associated with Alternative D have not been surveyed, or comprehensively surveyed, for the presence of archeological resources. Removal of Picnic Pavilions A, B, and D is of an anticipated restricted scale of ground disturbance that suggests that impacts to potential archeological resources would be minor and would generally involve the disturbance of near-surface deposits. Construction of a new visitor facility and associated infrastructure, such as water, sewer, and electricity, at Pavilion B would be associated with an increased level of ground disturbance. Impacts of this construction on archeological resources could range from minor to moderate depending on the nature of the potential archeological resources.

Prior to construction of a visitor facility at Pavilion B, the removal of Picnic Pavilions A, B and D, Picnic and Parking Area E, and Parking Area D and associated ball fields, the NPS would conduct an archeological

survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources.

Other actions under Alternative D such as closing a portion of the road between Area C and Area D and removing certain pavilions facilities would have a beneficial impact because they would remove high levels of recreational use near known resources and stabilize potential archeological areas. These actions would reduce erosion-causing activities as well as artifact hunting from these areas. Soil stabilization from vegetation and the designated interpretive trail networks could have a beneficial impact if these undertaking prevent erosion.

Under Alternative D, individual projects would include an archeological survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources. Because impacts to archeological sites would be avoided, minimized, or mitigated, the implementation of the actions under Alternative D has the potential to result in minor to moderate long-term adverse impacts to archeological resources. Beneficial impacts would also occur from the closure of the road in areas of high archeological resources, soil stabilization and designated interpretative trails reducing social trails.

CUMULATIVE IMPACTS

The cumulative impacts for Alternative D would be the same as those described in Alternative B. Alternative D would result in minor to moderate long-term adverse impacts to archeological resources. Collectively, Alternative D would have long-term minor adverse cumulative impacts on archeology and would add a minor increment to the cumulative impact.

CONCLUSION

Under Alternative D, individual projects would include an archeological survey to identify and evaluate for listing in the NRHP archaeological resources within the construction limit of disturbance. If found eligible, the NPS would take measures to avoid, minimize, or mitigate the impact of construction upon the archeological resources. Because impacts to archeological sites would be avoided, minimized, or mitigated, the implementation of the actions under Alternative D has the potential to result in minor to moderate long-term adverse impacts to archeological resources. There would be a long-term minor adverse cumulative impact to archeological resources.

VISITOR USE AND EXPERIENCE

METHODOLOGY AND ASSUMPTIONS

NPS Management Policies (2006) state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks, and that NPS is committed to providing appropriate high-quality opportunities for visitors to enjoy the parks. Fort Hunt Park provides a diversity of recreational opportunities and the potential for change in visitor experience was evaluated.

STUDY AREA

The study area for visitor use and experience is within the Fort Hunt Park boundary.

IMPACT THRESHOLDS

The thresholds of change for the intensity of impacts on visitor use and experience are defined as follows:

Negligible: Changes in visitor use and recreation resources would be barely perceptible. The visitor would not likely be aware of the effects associated with the action.

Minor: The visitor might be aware of the effects associated with the action, but would likely not express an opinion about it.

Moderate: Changes in visitor experience and recreation resources would be readily apparent. The visitor would be aware of the effects associated with the action and would likely express an opinion about the changes.

Major: Changes in visitor experience and recreation resources would be readily apparent and severely adverse. The visitor would be aware of the effects associated with the action and would likely express a strong opinion about the changes.

Duration: Short-term impacts would occur only during the treatment action or construction; long-term impacts would occur after the treatment action or construction.

IMPACTS OF ALTERNATIVE A: NO ACTION

Under the No Action Alternative, no new facilities would be constructed. Use of the picnicking facilities would continue to overwhelm the park infrastructure during peak visitation. Restrooms and parking would not be able to provide appropriate level of facilities for visitors during peak visitation periods. Circulation patterns would not be changed. Current maintenance and operation procedures would continue. No new interpretive resources would be added to the park. Visitor use and experience would be adversely affected because park resources would continue to be overwhelmed during peak visitor use and interpretive resources would not tell the full history of Fort Hunt Park. Interpretive capabilities would offer limited visitor contact and not provide a comprehensive interpretive experience at the park. Although there would be no change from current visitor services, the park's ability to provide information on park natural and cultural resources and to answer visitor questions would not realize the park's potential, resulting in a parkwide long-term minor adverse effect on visitor use and experience.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions have or could have cumulative impacts to visitor use and experience in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of the GWMP and Mount Vernon area. The No Action Alternative would have long-term minor adverse impacts on visitor use and experience and therefore would contribute to the effects of other actions although the contribution would be minor. Overall, there would be long-term beneficial cumulative impacts to visitor use and experience from past, present, and reasonably foreseeable future actions. The minor adverse impact from the No Action Alternative would have a very minor contribution to the overall cumulative impact.

CONCLUSION

The No Action Alternative would result in long-term minor adverse impacts to visitor use and experience because park resources would continue to be overwhelmed during peak visitor use and interpretive resources

would not fully describe the history of Fort Hunt Park. The No Action Alternative would have long-term minor adverse cumulative impacts.

IMPACTS OF ALTERNATIVE B

Under Alternative B, a new visitor facility and interpretative trails at Fort Hunt Park would enable GWMP to fulfill the project's objectives and goals outlined in the GWMP Long-Range Interpretive Plan. Alternative B would provide better visitor services, enhanced facilities, and additional educational, interpretive, and informational opportunities to enhance visitor enjoyment and satisfaction. The visitor facility would be a focal point of the park and starting point for the interpretative trails. Alternative B, along with each of the Action Alternatives, seeks to balance the current recreational visitor uses of Fort Hunt Park with an expanded interpretation program that focuses on the preservation of cultural and natural resources while educating park visitors of these resources. The long-term plan for the park would include the construction of interpretive facilities such as the proposed visitor facility that would incorporate exhibit space, an interpretive work area, a multipurpose room and restrooms to enhance the visitor experience. The placement of the visitor facility where Picnic Pavilion B exists today would be viewable from the park entrance and several vantage points throughout the park. This visitor facility with the proposed interpretive trail and other exterior interpretive areas would provide visitor with opportunities to learn about the Fort Hunt Park's cultural and natural resources within the contextual features of the park.

Recreational facilities at the park would be reduced to accommodate the interpretive facilities. However, the park's current programs, including permitting picnicking, ball fields, etc., would still be available for the continued enjoyment by park visitors. With Alternative B, permitted picnicking would be limited to Picnic Pavilion A. Facilities in this area would be upgraded to better enhance users of this site. Picnic Pavilions and Areas B, C, D, and E would be eliminated along with the ball fields in proximity to Picnic Pavilions B and D. With the elimination of these picnic pavilions/areas Parking Areas D and E would also be removed. Parking Area B would be redesigned to accommodate 50 to 100 parking spaces needed for the proposed visitor facility along with a drop-off area. This removal of permitted picnic pavilions would reduce the impacts of parking on nearby neighborhood during peak visitation. Additionally, Parking Area C would remain for the use of park visitors. The existing loop road would be designated as a one-way facility past the visitor facility and the remaining lane would be open to use as a bicycle/pedestrian lane. The elimination of infrastructure such as picnic pavilions, restrooms, and ball fields would have an adverse impact to certain visitor uses, but generally would be offset by accomplishing a more desired visitor experience consistent the park's Long-Range Interpretive Plan.

The design of individual projects and facilities would maximize accessibility for all visitors, including those with disabilities. The overall implementation of Alternative B would provide an enhancement to the visitor experience through the improvement of circulation and the enhanced understanding of the parks resources through interpretation. The reduced recreational facilities on-site may initially be viewed as a negative impact; however, reducing these facilities would be necessary to enhance the interpretive experience of the visitor and the long-term result would generally be viewed as a benefit. Regionally, Fairfax County has nearby recreational parks that offer shelters and pavilions for group picnicking (see Affected Environment chapter). Therefore, the implementation of Alternative B would result in a beneficial impact to visitor use and experience.

Alternative B would have a short-term moderate adverse impact on visitor use and experience. Individual projects would be implemented overtime in phases which would further minimize the intensity of short-term impacts. Fort Hunt Park is a heavily used park within the region and construction work would temporarily impede use of the park. Construction equipment and noise would also distract from the park aesthetics and natural soundscape. These impacts, while adverse, would be short-term and only last the duration of construction. Additionally, each of the individual projects associated with Alternative B would not be implemented at once. Construction of these individual projects would be timed so as to not interfere with the peak use periods of the park or to occur in certain areas of the park, leaving other park sections available for the enjoyment of park visitors.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions have or could have cumulative impacts to visitor use and experience in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of the GWMP and Mount Vernon area. Alternative B would have long-term moderate beneficial impacts to visitor use and the quality of the visitor experience. Overall, there would be long-term beneficial cumulative impacts to visitor use and experience from past, present, and reasonably foreseeable future actions. Alternative B would have a minor contribution to the cumulative impact.

CONCLUSION

Under Alternative B, the new visitor facility and interpretive trails would substantially improve the ability of the park to interact with park visitors and would provide the educational, interpretive, and informational opportunities and materials needed by all visitors to better enjoy the park. There would be a regional and park-wide long-term moderate beneficial effect to visitor use and the quality of the visitor experience. There would be short-term moderate adverse impacts during construction activities to implement Alternative B. There would be a long-term beneficial cumulative impact, with a minor contribution from Alternative B.

IMPACTS OF ALTERNATIVE C (PREFERRED ALTERNATIVE)

Under Alternative C, a new visitor facility and interpretative trails at Fort Hunt Park would enable GWMP to fulfill the project's objectives and goals outlined in the GWMP Long-Range Interpretive Plan. Alternative B would provide better visitor services, enhanced facilities, and additional educational, interpretive, and informational opportunities to enhance visitor enjoyment and satisfaction. The visitor facility would be a focal point of the park and starting point for the interpretative trails. Alternative C also seeks to balance the current recreational visitor uses of Fort Hunt Park with an expanded interpretation program that focuses on the preservation of cultural and natural resources while educating park visitors of these resources. Under Alternative C, the long-term plan for the park would include the construction of interpretive facilities such as the proposed visitor facility that would incorporate exhibit space, an interpretive work area, a multipurpose room and restrooms to enhance the visitor experience. The placement of the visitor facility, in the wooded space where Picnic Pavilion/Area C exists today, would be removed from the park's recreational facilities. This visitor facility with the proposed interpretive trail and other exterior interpretive areas would provide visitor with opportunities to learn about the Fort Hunt Park's cultural and natural resources within the contextual features of the park.

Recreational facilities at the park would be reduced to accommodate the interpretive facilities. However, the park's current programs, including permitting picnicking, ball fields, etc., would still be available for the

continued enjoyment by park visitors. With Alternative C, permitted picnicking would be limited to Picnic Pavilion A. Facilities in this area would be upgraded to better enhance users of this site. Picnic Pavilions and Areas B, C, D, and E would be eliminated along with the ball field in proximity to Picnic Pavilion D. With the elimination of these picnic pavilions/areas Parking Areas D and E would also be removed. The removal of these facilities would reduce pavilions available for picnicking and convert this area to open space for other recreation. This removal of permitted picnic pavilions would reduce the impacts of parking on nearby neighborhood during peak visitation. Parking Area C would be redesigned to accommodate 50 to 100 parking spaces needed for the proposed visitor facility along with a drop-off area. Additionally, Parking Area B would remain for the use of park visitors. The existing loop road would be designated as a two-way facility with a turn-around at the visitor facility, where the road would terminate. A bicycle and pedestrian trail would parallel the road along the north portion of the park and then connect with the unused portion of the loop road to follow this alignment to the park's entrance. The elimination of infrastructure such as picnic pavilions, restrooms, and ball fields would have an adverse impact to certain visitor uses, but generally would be offset by accomplishing a more desired visitor experience consistent with the park's Long-Range Interpretive Plan.

The design of individual projects and facilities would maximize accessibility for all visitors, including those with disabilities. The overall implementation of Alternative C would provide an enhancement to the visitor experience through the improvement of circulation and the enhanced understanding of the park's resources through interpretation. The reduced recreational facilities on-site may initially be viewed as a negative impact; however, reducing these facilities would be necessary to enhance the interpretive experience of the visitor and the long-term result would generally be viewed as a benefit. Regionally, Fairfax County has nearby recreational parks that offer shelters and pavilions for group picnicking (see Affected Environment chapter). Therefore, the implementation of Alternative C would result in a beneficial impact to visitor use and experience.

The construction of Alternative C would have a short-term moderate adverse impact on visitor use and experience. Individual projects would be implemented over time in phases which would further minimize the intensity of short-term impacts. Fort Hunt Park is a heavily used park within the region and construction work would temporarily impede use of the park. Construction equipment and noise would also distract from the park's aesthetics and natural soundscape. These impacts, while adverse, would be short-term and only last the duration of construction. Additionally, each of the individual projects associated with Alternative C would not be implemented at once. Construction of these individual projects would be timed so as to not interfere with the peak use periods of the park or to occur in certain areas of the park, leaving other park sections available for the enjoyment of park visitors.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions have or could have cumulative impacts to visitor use and experience in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of the GWMP and Mount Vernon area. Alternative C would have long-term moderate beneficial impacts to visitor use and the quality of the visitor experience. Overall, there would be long-term beneficial cumulative impacts to visitor use and experience from past, present, and reasonably foreseeable future actions. Alternative C would have a minor contribution to the cumulative impact.

CONCLUSION

Under Alternative C, the new visitor facility and interpretive trails would substantially improve the ability of the park to interact with park visitors and would provide the educational, interpretive, and informational opportunities and materials needed by all visitors to better enjoy the park. There would be a regional and park-wide long-term moderate beneficial effect to visitor use and the quality of the visitor experience. There would be short-term moderate adverse impacts during construction activities to implement Alternative C. There would be a long-term beneficial cumulative impact, with a minor contribution from Alternative C.

IMPACTS OF ALTERNATIVE D

Under Alternative D, a new visitor facility at Fort Hunt Park would enable GWMP to provide better visitor services by providing educational, interpretive, and informational opportunities and materials needed by all visitors to better enjoy the park. The visitor facility would focal point of the park and starting point for the interpretive trails. Alternative D, along with each of the Action Alternatives, seeks to balance the current recreational visitor uses of Fort Hunt Park with an expanded interpretation program that focuses on the preservation of cultural and natural resources while educating park visitors of these resources. The long-term plan for the park would include the construction of interpretive facilities such as the proposed visitor facility that would incorporate exhibit space, an interpretive work area, a multipurpose room and restrooms to enhance the visitor experience. The placement of the visitor facility where Picnic Pavilion B exists today would be viewable from the park entrance and several vantage points throughout the park. This center, with the proposed interpretive trail and other exterior interpretive areas, would provide visitor with opportunities to learn about the Fort Hunt Park's cultural and natural resources within the contextual features of the park.

Recreational facilities at the park would be reduced to accommodate the interpretive facilities. However, the park's current programs, including permitting picnicking, ball fields, etc., would still be available for the continued enjoyment by park visitors. With Alternative D, permitted picnicking would be limited to Picnic Pavilion/Area C. Picnic Pavilions and Areas A, B, D, and E would be eliminated along with the ball fields in proximity to Picnic Pavilions B and D. With the elimination of these picnic pavilions/areas Parking Areas D and E would also be removed. Parking Area B would be redesigned to accommodate 50 to 100 parking spaces needed for the proposed visitor facility along with a drop-off area. Additionally, Parking Area C would remain for the use of park visitors. This removal of permitted picnic pavilions would reduce the impacts of parking on nearby neighborhood during peak visitation. The existing loop road would be realigned to a smaller loop, utilizing the existing maintenance road and reconnected via a round-about immediately east of the visitor facility and parking area. The loop road would be a two-way facility to the visitor facility and parking area, after which it would continue as a one-way road in a counter-clockwise fashion to the round-about. A bicycle and pedestrian trail would parallel the road along the north portion of the park and then connect with the unused portion of the loop road to follow this alignment to the park's entrance. The bike/pedestrian trail would be a feature that would enhance recreational use of the site. The elimination of infrastructure such as picnic pavilions, restrooms, and ball fields would have an adverse impact to certain visitor uses, but generally would be offset by accomplishing a more desired visitor experience consistent the park's Long-Range Interpretive Plan.

The design of individual projects and facilities would maximize accessibility for all visitors, including those with disabilities. The overall implementation of Alternative D would provide an enhancement to the visitor experience through the improvement of circulation and the enhanced understanding of the parks resources

through interpretation. The reduced recreational facilities on-site may initially be viewed as a negative impact; however, reducing these facilities would be necessary to enhance the interpretive experience of the visitor and the long-term result would generally be viewed as a benefit. Regionally, Fairfax County has nearby recreational parks that offer shelters and pavilions for group picnicking (see Affected Environment Chapter). Therefore, the implementation of Alternative D would result in a beneficial impact to visitor use and experience.

The construction of Alternative D would have a short-term moderate adverse impact on visitor use and experience. Individual projects would be implemented overtime in phases which would further minimize the intensity of short-term impacts. Fort Hunt Park is a heavily used park within the region and construction work would temporarily impede use of the park. Construction equipment and noise would also distract from the park aesthetics and natural soundscape. These impacts, while adverse, would be short-term and only last the duration of construction. Additionally, each of the individual projects associated with Alternative D would not be implemented at once. Construction of these individual projects would be timed so as to not interfere with the peak use periods of the park or to occur in certain areas of the park, leaving other park sections available for the enjoyment of park visitors.

CUMULATIVE IMPACTS

Other past, present, and reasonably foreseeable future actions have or could have cumulative impacts to visitor use and experience in the geographic boundaries. The geographic boundary for cumulative impacts was defined as the southern portion of the GWMP and Mount Vernon area. Alternative D would have long-term moderate beneficial impacts to visitor use and the quality of the visitor experience. Overall, there would be long-term beneficial cumulative impacts to visitor use and experience from past, present, and reasonably foreseeable future actions. Alternative D would have a minor contribution to the cumulative impact.

CONCLUSION

Under Alternative D, the new visitor facility and interpretive trails would substantially improve the ability of the park to interact with park visitors and would provide the educational, interpretive, and informational opportunities and materials needed by all visitors to better enjoy the park. There would be a regional and park-wide long-term moderate beneficial effect to visitor use and the quality of the visitor experience. There would be short-term moderate adverse impacts during construction activities to implement Alternative D. There would be a long-term beneficial cumulative impact, with a minor contribution from Alternative D.

PARK OPERATIONS AND MANAGEMENT

METHODOLOGY AND ASSUMPTIONS

Park operations and management, for the purpose of this analysis, refers to the quality and effectiveness of the Park staff to maintain and administer Park resources and facilities and to provide for an effective visitor experience. This includes an analysis of the condition and maintenance of the facilities used to support the operations of the Park. Facilities included in this project include the Park itself and the sites within the study area. Park staff who are knowledgeable of these issues were members of the planning team that evaluated the impacts of each alternative. The impact analysis is based on the current description of Park operations presented in “Chapter 3: Affected Environment” of this document.

STUDY AREA

The study area for park operations and management includes Fort Hunt Park and the southern portion of GWMP, from the Woodrow Wilson Bridge to the southern terminus of the George Washington Memorial Parkway at Mount Vernon.

IMPACT THRESHOLDS

Impact thresholds for Park Operations and Management are as follows.

Negligible: The effects would be at low levels of detection and would not have an appreciable effect on park operations.

Minor: The effect would be detectable and would be of a magnitude that would not have an appreciable effect on park operations. If mitigation was needed to offset adverse effects, it would be simple and likely successful.

Moderate: The effects would be readily apparent and result in a substantial change in park operations in a manner noticeable to staff and the public. Mitigation measures would be necessary to offset adverse effects and would likely be successful.

Major: The effects would be readily apparent, result in a substantial change in park operation in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, extensive, and success could not be guaranteed.

Duration: Short-term impacts would last for the duration of the treatment action; Long-term impacts would last longer than the duration of the treatment action.

IMPACTS OF ALTERNATIVE A: NO ACTION

The No Action Alternative represents a continuation of current operation and maintenance practices. The park police station and paddocks would remain in their current locations. The maintenance facility would continue to serve the southern portion of GWMP and would remain in its current location within Fort Hunt Park. Operations and maintenance within Fort Hunt Park would continue to be stressed by the overuse of park facilities during times of peak visitation. During these times, restroom and parking facilities are inadequate to handle visitor capacity. Park police would continue to handle noise issues resulting from picnic area users impacting the park neighbors.

The No Action Alternative would result in long-term minor adverse impacts to park operations and maintenance due to the overuse of park facilities and increased need for park police during times of peak visitation.

CUMULATIVE IMPACTS

There are no cumulative impact projects that would impact park operations and management within the study area. Therefore, the No Action Alternative would have no cumulative impact.

CONCLUSION

The No Action Alternative would result in long-term minor adverse impacts to park operations and maintenance due to the overuse of park facilities and general facility needs for park police and maintenance, to provide services during times of peak visitation. The No Action Alternative would have no cumulative impact.

IMPACTS OF ALTERNATIVE B

Under Alternative B, vehicular circulation follows the existing loop road around the perimeter of the park. Traffic along the loop road would be two-way traffic from the park entrance to the Parking Area B. Beyond this parking area, traffic would be designated as one-way as it follows the western and southern perimeter of the park and ultimately reconnects with the park entrance road. In the event of an emergency park police and/or staff would use appropriate precautions to proceed in the opposite direction of the one-way traffic. One lane of the two-lane loop road would be designated as a bicycle/pedestrian lane. From the park entrance to Parking Area B, where the road would accommodate two-way vehicular traffic, the cross-section of the road would be widened to accommodate the trail.

The proposed visitor facility would be constructed at the current site of Picnic Pavilion B, and would not exceed 6,400 square feet. Visitor facility staffing would be considered as plans and programs are developed. Permitted picnicking would be limited to Picnic Pavilion A. The total number of visitors utilizing the site for permitted picnics at any time would be limited to 600 persons. Picnic Pavilion C, D, and E, and associated restrooms and ball fields would be removed. As park police and staff are often overwhelmed during periods of peak use of the picnic facilities, the removal of these picnic facilities and resulting reduction in staff needs would be beneficial to park operations and management. In addition, the removal of ball fields and rest room facilities would provide a benefit to park operations and management as less maintenance would be required. The visitor facility would require additional staffing for interpretation and maintenance.

Park operations would be disrupted during construction activities. Construction of the new entrance and the widening of the northern section of the loop road would require maintenance of traffic during construction. Park staff would need to provide safety measures around construction zones to protect visitors. These impacts, while adverse, would be short-term and only last for the duration of construction. The construction of Alternative B would result in short-term moderate impacts to park operations and management.

The reduction in permitted picnics and total visitors using the park for this purpose would require fewer park police and staff to be on site to monitor these activities, providing a benefit to park operations and management. Alternative B would result in a beneficial impact to park operations and management because of the reduction in supervision necessary for permitted picnics.

CUMULATIVE IMPACTS

There are no cumulative impact projects that would impact park operations and management within the study area. Therefore, Alternative B would have no cumulative impact.

CONCLUSION

Alternative B would result in short-term moderate impacts to park operations and management from the disruption to traffic flow and increased need for management during construction. A long-term minor adverse impact to park operations would occur from the one-way vehicular circulation pattern and additional staff

requirements for the visitor facility. Alternative B would result in a beneficial impact to park operations and management because of the reduction in supervision necessary for permitted picnics. Alternative B would have no cumulative impacts.

IMPACTS OF ALTERNATIVE C (PREFERRED ALTERNATIVE)

Under Alternative C, vehicular access would be limited to the northern portion of the existing loop road. The road would be designated two-way and would follow the current alignment from the intersection with the park entrance road and would connect to the existing Parking Areas A, B, and C. Vehicular access to the maintenance and park police facilities would remain in their current locations. The road would terminate via a turn-around in Parking Area C at the site of the proposed visitor facility.

The proposed visitor facility would be constructed at the current site of Picnic Pavilion C, and would not exceed 6,400 square feet. Visitor facility staffing would be considered as plans and programs are developed. Permitted picnicking would be limited to Picnic Pavilion A. The total number of visitors utilizing the site for permitted picnics at any time would be limited to 600 persons. Picnic Pavilion B, D, and E, and associated restrooms and ball fields would be removed. The removal of these facilities and the reduction in the size of permitted picnics would result in a decreased need for maintenance and staff at the park. Currently, park police and staff are overwhelmed during times of peak visitor use due to the vast number of visitors utilizing the park's picnic facilities and so a reduction in permitted picnics would provide a benefit to park operations and management. The visitor facility would require additional staffing for interpretation and maintenance.

Park operations would be disrupted during construction activities. Construction of the new entrance would require maintenance of traffic during construction. Park staff would need to provide safety measures around construction zones to protect visitors. These impacts, while adverse, would be short-term and only last for the duration of construction. The construction of Alternative C would result in short-term moderate impacts to park operations and management.

The reduction in permitted picnics and total visitors using the park for this purpose would require fewer park police and staff to be on site to monitor these activities, providing a benefit to park operations and management. Alternative C would result in a beneficial impact to park operations and management because of the reduction in supervision necessary for permitted picnics.

CUMULATIVE IMPACTS

There are no cumulative impact projects that would impact park operations and management within the study area. Therefore, the Alternative C would have no cumulative impact.

CONCLUSION

Alternative C would result in short-term moderate impacts to park operations and management from the disruption to traffic flow and increased need for management during construction. Alternative C would result in a beneficial impact to park operations and management because of the reduction in supervision necessary for permitted picnics. Alternative C would have no cumulative impacts.

IMPACTS OF ALTERNATIVE D

Under Alternative D, vehicular circulation would continue along the northern portion of the loop road. A smaller loop would circle the general location of the proposed visitor facility, providing access to the existing Parking Area C near existing Picnic Pavilion and Area C. The eastern alignment of the loop road would follow the existing maintenance road that runs north south through the upper portions of the park open space. The roadway would then reconnect to the entry road east of the visitor facility with a traffic circle. Two-way traffic would be maintained from the park entrance up to the traffic circle. Immediately following the visitor facility parking the loop road would be designated as one-way until it reconnects with the entrance road.

The proposed visitor facility would be constructed at the current site of Picnic Pavilion B, and would not exceed 6,400 square feet. Visitor facility staffing would be considered as plans and programs are developed. Permitted picnicking would be limited to Picnic Pavilion C. The visitor facility would require additional staffing for interpretation and maintenance.

Picnic Pavilion A, D, and E, and associated restrooms and the ball field associated with Picnic Area D would be removed. The total number of visitors utilizing the site for permitted picnics at any time would be limited to 320 persons. Removal of Pavilion A (largest pavilion) would have a considerable effect on park operations and reduce maintenance needs during visitation peak period for the park. The removal of the ball field and restrooms would also reduce the need for maintenance. This reduction in maintenance needs at the park would provide a benefit to park operations and management.

Park operations would be disrupted during construction activities. Construction of the new entrance would require maintenance of traffic during construction. Park staff would need to provide safety measures around construction zones to protect visitors. These impacts, while adverse, would be short-term and only last for the duration of construction. The construction of Alternative D would result in short-term moderate impacts to park operations and management.

Under Alternative D, vehicular circulation within the park would be one-way from the traffic circle to the connection with the park entrance road. In the event of an emergency park police and/or staff would use appropriate precautions to proceed in the opposite direction of the one-way traffic. A long-term negligible adverse impact to park operations would occur from the one-way vehicular circulation pattern.

The reduction in permitted picnics and total visitors using the park for this purpose would require fewer park police and staff to be on site to monitor these activities, providing a benefit to park operations and management. Alternative D would result in a beneficial impact to park operations and management because of the reduction in supervision necessary for permitted picnics.

CUMULATIVE IMPACTS

There are no cumulative impact projects that would impact park operations and management within the study area. Therefore, Alternative D would have no cumulative impact.

CONCLUSION

Alternative D would result in short-term moderate impacts to park operations and management from the disruption to traffic flow and increased need for management during construction. A long-term minor adverse impact to park operations would occur from the one-way vehicular circulation pattern and additional staff

needed to operate the visitor facility. Alternative D would result in a beneficial impact to park operations and management because of the reduction in supervision necessary for permitted picnics. Alternative D would have no cumulative impacts.

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CHAPTER 5: CONSULTATION AND COORDINATION

The NPS places a high priority on public involvement in the NEPA process and on giving the public an opportunity to comment on proposed actions. As part of the NPS NEPA process, issues associated with the proposed action were identified during the internal scoping meeting held with NPS and have been communicated to other affected agencies and stakeholders.

AGENCY SCOPING

Agency scoping for the Fort Hunt SDP EA/AoE began January 10, 2011 and concluded March 11, 2011. During this time, scoping letters were sent requesting information on potential issues or resources associated with the project. The agencies were also invited to attend the public scoping meeting.

SECTION 7 CONSULTATION

Coordination with local and federal agencies and various interest groups was conducted during the NEPA process to identify issues and/or concerns related to the SDP at Fort Hunt Park. In accordance with Section 7 of the Endangered Species Act, consultation letters were sent from the NPS to the USFWS and the VDCR on December 13, 2010 (See Appendix B).

VDCR responded via a letter and stated that the project area is within the Mount Vernon Shoreline Conservation Site. This conservation site contains the natural heritage resource of concern, the Bald Eagle (*Haliaeetusleucocephalus*). This species is classified as Threatened by the Virginia VDGIF. VDCR recommends coordination with VDGIF to ensure compliance with protected species legislation. VDCR confirmed that the project would not impact any documented state-listed plants or insects or any State Natural Area Preserves.

SECTION 106 CONSULTATION

In accordance with the provisions at 36 CFR 800.8(c), the NPS set out to use the process and documentation required for the preparation of this EA/AoE to comply with Section 106 of the National Historic Preservation Act. Through these integrated processes, the NPS contacted parties with an interest in historic preservation including the State Historic Preservation Office, the Council on Virginia Indians, and local governments, and identified the Fairfax County Parks Authority as an interested consulting party. In consultation with these parties, the NPS was able to identify known historic properties listed in or eligible for inclusion in the National Register of Historic Places within the broadly defined area of potential effects for this SDP. However, due to the general nature of the SDP and the relative uncertainty of the nature of federal undertakings which may stem from it, the NPS cannot yet assess the potential effects of these undertakings on historic properties.

The SDP is part of the “nondestructive project planning” for these prospective undertakings, and as such does not “restrict the subsequent consideration of alternatives to avoid, minimize or mitigate [a specific] undertaking’s adverse effects on historic properties” in accordance with 36 CFR 800.1(c). Accordingly, the NPS finds that no historic properties will be affected by the development of the SDP in accordance with 36 CFR 800.4(d)(1). Further, the NPS commits in this document to complete the Section 106 review for each undertaking that may stem from the SDP in accordance with the Programmatic Agreement among the National

Park Service, the ACHP, and the National Conference of State Historic Preservation Officers for Compliance with Section 106 of the National Historic Preservation Act (2008) and the ACHP's regulations. NPS will include Fairfax County Park Authority as a consulting party on all undertakings stemming from this SDP, as well as any additional parties identified during the public review of this EA/AoE or subsequently.

VIRGINIA COASTAL ZONE MANAGEMENT PROGRAM

All federal actions within the Virginia Coastal Zone must be consistent with the Virginia Coastal Zone Management Program (VCP). The VCP is administered by several agencies; however, Virginia Department of Environmental Quality (VDEQ) is the lead agency which coordinates review of federal consistency determinations. "The federal consistency regulations implement the CZMA requirement that federal actions (regardless of location) that have reasonably foreseeable effects on any land or water use or natural resource of the coastal zone (also referred to as coastal uses or resources, or coastal effects) must be consistent with the enforceable policies of a coastal state's federally approved coastal management program, before they can occur" (VDEQ 2010c).

A CZMA Consistency Determination is required for all federal development projects taking place within a designated Coastal Zone. In Virginia, consistency for federal projects is reviewed by the VDEQ. The state designated coastal zone includes all of Fairfax County; therefore, Fort Hunt Park is entirely within the Coastal Zone. Appendix C provides the Fort Hunt Park Consistency Determination. As outlined in the Fort Hunt Park Consistency Determination, the No Action and Action Alternatives would have negligible direct, indirect, secondary or cumulative impacts on resources associated with the Coastal Zone. Correspondingly, the proposed actions would not require any Coastal Zone permits from the Virginia Marine Resource Commission (VMRC), the State Air Pollution Control Board, or other state agencies. All new construction is proposed in previously disturbed areas.

COMMENT PERIOD

To comment on this EA/AoE, you may mail comments or submit them online within 30 days of the publication of this EA/AoE. Please be aware that your comments and personal identifying information may be made publicly available at any time. While you may request that NPS withhold your personal information, we cannot guarantee that we will be able to do so. Please submit comments online at <http://parkplanning.nps.gov/GWMP> and follow the appropriate links. Comments may also be submitted via mail addressed to:

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GLOSSARY AND ACRONYMS

GLOSSARY OF TERMS

Affected Environment — The existing environment to be affected by a proposed action and alternatives.

Best Management Practices — Methods that have been determined to be the most effective, practical means of preventing or reducing pollution or other adverse environmental impacts.

Contributing Resource — A building, site, structure, or object that adds to the historic significance of a property or district.

Council on Environmental Quality — Established by Congress within the Executive Office of the President with passage of the *National Environmental Policy Act* of 1969. CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives.

Cultural Landscape — Environments that include natural and cultural resources associated with a historical context.

Cultural Resources — Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reason.

Cumulative Impacts — Under NEPA regulations, the incremental environmental impact or effect of an action together with the effects of past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions (40 CFR Part 1508.7).

Endangered Species — Any species that is in danger of extinction throughout all or a significant portion of its range. The lead federal agency for the listing of a species as endangered is the U.S. Fish and Wildlife Service, and it is responsible for reviewing the status of the species on a five-year basis.

Endangered Species Act (16 U.S.C. 1531 et seq.) — An Act which provides a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved and which provides a program for the conservation of such endangered species and threatened species.

Environmental Assessment — An environmental analysis prepared pursuant to the *National Environmental Policy Act* to determine whether a federal action would significantly affect the environment and thus require a more detailed environmental impact statement (EIS).

Executive Order — Official proclamation issued by the President that may set forth policy or direction or establish specific duties in connection with the execution of federal laws and programs.

Floodplain — The flat or nearly flat land along a river or stream or in a tidal area that is covered by water during a flood.

Impairment — Within this document, the term impairment has two separate definitions. The NPS requires an analysis of potential effects to determine whether actions would impact or impair Park resources. NPS is empowered with the management discretion to allow impacts on Park resources and values (when necessary

and appropriate) to fulfill the purposes of a Park, as long as the impact does not constitute impairment of the affected resources and values. Impairment is also a classification of poor water quality for a surface water body under the U.S. Clean Water Act.

National Environmental Policy Act (NEPA) — The Act as amended, articulates the federal law that mandates protecting the quality of the human environment. It requires federal agencies to systematically assess the environmental impacts of their proposed activities, programs, and projects including the “no build” alternative of not pursuing the proposed action. NEPA requires agencies to consider alternative ways of accomplishing their missions in ways which are less damaging to the environment.

National Historic Preservation Act of 1966 (16 U.S.C. 470 et seq.) — An Act to establish a program for the preservation of historic properties throughout the nation, and for other purposes, approved October 15, 1966 [Public Law 89-665; 80 STAT. 915; 16 U.S.C. 470 as amended by Public Law 91-243, Public Law 93-54, Public Law 94-422, Public Law 94-458, Public Law 96-199, Public Law 96-244, Public Law 96-515, Public Law 98-483, Public Law 99-514, Public Law 100-127, and Public Law 102-575].

National Register of Historic Places (NRHP) — A register of districts, sites, buildings, structures, and objects important in American history, architecture, archeology, and culture, maintained by the Secretary of the Interior under authority of Section 2(b) of the *Historic Sites Act* of 1935 and Section 101(a)(1) of the *National Historic Preservation Act* of 1966, as amended.

Scoping — Scoping, as part of NEPA, requires examining a proposed action and its possible effects; establishing the depth of environmental analysis needed; and determining analysis procedures, data needed, and task assignments. The public is encouraged to participate and submit comments on proposed projects during the scoping period.

Threatened Species — Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

ACRONYMS

ABA	Architectural Barriers Act
ABAAS	Architectural Barriers Act Accessibility Standard
ADA	Americans with Disabilities Act
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
ARPA	Archeological Resources Protection Act
BMPs	Best Management Practices
BRAC	Base Realignment and Closure
CCC	Civilian Conservation Corps
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CLI	Cultural Landscape Inventory
CRZ	critical root zone
CT	Census Tract
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DM	Departmental Manual
DO	Director's Order
EA	Environmental Assessment
EDA	Economic Development Authority
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
GWMP	George Washington Memorial Parkway
IPM	Integrated Pest Management
LEED	Leadership in Energy and Environmental Design
MBTA	Migratory Bird Treaty Act
MS4	Municipal Separate Storm Sewer System
NCO	Non-Commissioned Officer
NCR	National Capital Region
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OCRM	Office of Ocean and Coastal Resource Management

PEPC	Planning, Environment and Public Comment
PL	Public Law
RPA	Resource Protection Area
SDP	Site Development Plan
SHPO	State Historic Preservation Office
SSI	Sustainable Sites Initiative
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
VCOI	Virginia Council on Indians
VCP	Virginia Coastal Zone Management Program
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDGIF	Virginia Department of Game and Inland Fisheries
VDHR	Virginia Department of Historical Resources
VMRC	Virginia Marine Resources Commission
VSMP	Virginia Stormwater Management Program
VWP	Virginia Water Protection

BIBLIOGRAPHY

- American Farmland Trust (AFT) Farmland Information Center (2006). *Fact Sheet – Farmland Protection Policy Act*. Retrieved February 2, 2011 from http://www.farmlandinfo.org/documents/29480/FPPA_8-06.pdf.
- APEC (no date). *Health Risks of Heavy Metals*. Retrieved on February 2, 2011 from <http://www.freedrinkingwater.com/water-education/quality-water-heavy metals.htm>.
- The Architectural and Transportation Barriers Compliance Board (ATBCB) (1999). *Regulatory Negotiation Committee on Accessibility Guidelines for Outdoor Developed Areas – Final Report*. Retrieved on April 4, 2011 from <http://www.access-board.gov/outdoor/outdoor-rec-rpt.htm>.
- Bailey, C.M. (1999). *Physiographic Map of Virginia*. Retrieved on January 27, 2011 from http://web.wm.edu/geology/virginia/provinces/pdf/va_physiography.pdf?svr=www.
- Bies, Brandon S. (2005) *Section 106 Archeological Investigations of Picnic Shelter Locations, Fort Hunt Park, George Washington Memorial Parkway* (memo report, Section 106 compliance). National Park Service, George Washington Memorial Parkway.
- Cable News Network (CNN) (April 19, 2011). *Gun rights advocates rally in Washington, Virginia*. Retrieved online from http://articles.cnn.com/2010-04-19/politics/second.amendment.rally_1_gun-rights-advocates-gun-owners-constitution-rally?_s=PM:POLITICS.
- The College of William and Mary (William and Mary) (no date). Department of Geology. *Geology of Virginia*. Retrieved December 28, 2010, from http://www.wm.edu/geology/virginia/provinces/coastalplain/coastal_plain.html.
- DC Department of Health (DDOH) (2004a). *District of Columbia Final Total Maximum Daily Load for Fecal Coliform Bacteria in Upper Potomac River, Middle Potomac River, Lower Potomac River*. Retrieved on February 2, 2011 from http://www.epa.gov/reg3wapd/tmdl/dc_tmdl/Potomac-Bacteria/Final_DC_TMDLforFCBacteriainPotomacRiverandTributa_.pdf.
- DDOH (2004b). *District of Columbia Final Total Maximum Daily Load for Organics and Metals in Battery Kemble Creek Foundry Branch and Dalecarlia Tributary*. Retrieved on February 2, 2011 from http://www.epa.gov/reg3wapd/tmdl/dc_tmdl/PotomacTrib/PotomacTribReport.pdf.
- Department of Mines Minerals and Energy (DMME) (2006). *Sinkholes and Karst Terrain*. Retrieved on May 17, 2011 from <http://www.dmme.virginia.gov/DMR3/sinkholes.shtml>
- Fairfax County (2011). *Station Map – Fire and Rescue*. Retrieved on January 28, 2011 from http://www.fairfaxcounty.gov/fr/deptinfo/fs_map.htm.
- Fairfax County (2011a). *The Comprehensive Plan: 2011 Edition*. Retrieved on May 20, 2011 from <http://www.fairfaxcounty.gov/dpz/comprehensiveplan/>

- Fairfax County (2010a). *Digital Map Viewer*. Fairfax County GIS and Mapping Department Retrieved on January 27, 2010 from <http://www.fairfaxcounty.gov/gisapps/pdfviewer/>.
- Fairfax County (2010b) *FAQs: Resource Protection Areas*. Retrieved on January 29, 2011 from <http://www.fairfaxcounty.gov/dpwes/navbar/faqs/rpa.htm>.
- Fairfax County (2010c). *FY 2010 Adopted Budget – CIP (Capital Improvement Program)*. Retrieved January 31, 2011 from http://www.fairfaxcounty.gov/dmb/adopted/fy2010/fy10_adopted_cip.htm.
- Fairfax County (2010h). *Reservable Picnic Areas*. Retrieved on May 3, 2011 from <http://www.fairfaxcounty.gov/parks/picnics/wp-reserve-areas.htm>.
- Fairfax County Stormwater Planning Division (2004). *Little Hunting Creek Watershed Management Plan*. Retrieved on March 3, 2011 from http://www.fairfaxcounty.gov/dpwes/watersheds/littlehuntingcreek_docs.htm.
- Fairfax County Economic Development Authority (EDA) (no date a). *BRAC*. Retrieved on January 31, 2011 from <http://www.fairfaxcountyeda.org/brac>.
- Fairfax County (2003). *Understanding the Chesapeake Bay Preservation Ordinance Amendments*. Office of Public Affairs, 12000 Government Center Parkway, Suite 551, Fairfax, VA 22035.
- Federal Emergency Management Agency (FEMA) (2010) Flood Insurance Rate Map. Map Number 51059C0410E. September 17, 2010.
- Friends of Huntley Meadows Park (no date). *Friends of Huntley Meadows Park*. Retrieved on January 27, 2011 from <http://www.friendsofhuntleymeadows.org/>.
- Inashima, Paul Y. (1986). *Preliminary Archeological Reconnaissance of the Proposed Fort Hunt Southbound Access Road*. (memo report). US Department of the Interior, National Park Service, Denver Service Center.
- Inashima, Paul Y. (1985). *Archeological Survey Report: An Archeological Investigation of Selected Construction Locales along the Mount Vernon Memorial Highway*. US Department of the Interior, National Park Service, Denver Service Center.
- Laird, Matthew R. (2000). *By the River Potomac, An Historic Resource Study of Fort Hunt Park, George Washington Memorial Parkway, Mount Vernon, Virginia*. Prepared for the U.S. Department of the Interior, National Park Service, National Capital Region.
- Leach, Sara Amy (1990) *National Register of Historic Properties Multiple Property Documentation Form for Parkways of the National Capital Region, 1913-1965*.
- Mackintosh, Barry (1996). *George Washington Memorial Parkway Administrative History*. Park History Program, Washington DC.

- Mount Vernon Ladies' Association (2011a). *The Fred W. Smith National Library for the Study of George Washington*. Retrieved on January 31, 2011 from <http://www.mountvernon.org/visit/plan/index.cfm/pid/1355/>.
- Mount Vernon Ladies' Association (2011b). *George Washington's Mount Vernon – About Us*. Retrieved on January 28, 2011 from http://www.mountvernon.org/mountvernon/about_us/index.cfm/cfid/1543571/cftoken/76886428.
- Municode.com (no date) *Fairfax County, Virginia – Code of Ordinances*. Retrieved on February 3, 2011 from <http://library.municode.com/>.
- Metropolitan Washington Council of Governments (MWCOC) (no date). *Air Quality*. Retrieved on May 23, 2011 from <http://www.mwcog.org/environment/air/>.
- MWCOG (2011). *Transportation Improvement Program for the Metropolitan Washington Region: FY 2011-2016*. Retrieved on May 20, 2011 from http://www.mwcog.org/clrp/projects/tip/fy1116tip/FY_2011-2016_TIP.pdf
- National Oceanic and Atmospheric Administration (NOAA) (2007). *Coastal Zone Management Act*. Retrieved on January 31, 2011 from http://coastalmanagement.noaa.gov/czm/czm_act.html.
- National Park Service (NPS) (no date a). *District Two*. Retrieved on January 31, 2011 from http://www.nps.gov/uspp/district_two.htm.
- NPS (no date b). *Fort Hunt – The Forgotten Story*. Retrieved on January 31, 2011 from <http://www.nps.gov/gwmp/upload/From%20In-Depth%20-%20FH%20-%20The%20Forgotten%20Story.pdf>
- NPS (no date c). *Fort Hunt, Virginia – A Historical Sketch*. Retrieved on January 31, 2011 from <http://www.nps.gov/gwmp/upload/From%20In-Depth%20-%20FHP%20-%20A%20Historical%20Sketch.pdf>
- NPS (no date d). *The Secrets of P.O. Box 1142 An Interpretive Concept for Fort Hunt Visitor Contact Station*.
- NPS (2011a). *George Washington Memorial Parkway – Fort Hunt Park*. Retrieved on February 4, 2011 from <http://www.nps.gov/gwmp/fort-hunt.htm>.
- NPS (2011b). *Recreation.gov – Explore your America*. Retrieved on April 25, 2011 from http://www.recreation.gov/camping/Fort_Hunt_Va/r/campgroundDetails.do?contractCode=NRSO&parkId=70975&topTabIndex=CampingSpot.
- NPS (2008a). *Dyke Marsh Wetland Restoration and Long Term Management Plan Environmental Impact Statement, Public Scoping, April 2008*. Retrieved on January 31, 2011 from <http://parkplanning.nps.gov/publicHome.cfm>.
- NPS (2008b). *GWMP North Section Rehabilitation Environmental Assessment / Assessment of Effect*. March 2008.
- NPS (2006). *Management Policies 2006*. Retrieved on February 2, 2011 from <http://www.nps.gov/policy/mp2006.pdf>.

- NPS (2005). *George Washington Memorial Parkway Long-Range Interpretive Plan*. Retrieved on March 8, 2011 from http://www.nps.gov/history/history/online_books/gwmp/interpretive_plan.pdf
- NPS (2004). *Cultural Landscapes Inventory, Fort Hunt, George Washington Memorial Parkway*.
- NPS (2002a). *DO-77-1: Wetland Protection*. Washington, DC.
- NPS (2002b). *Fort Hunt Batteries Conditions and Treatment Plan, Fort Hunt, George Washington Memorial Parkway*.
- NPS (2001). *DO-12: Conservation Planning, Environmental Impact Analysis, and Decision-making*. Washington, DC.
- NPS (2000). *DO-47: Sound Preservation and Noise Management*. Washington, DC.
- NPS (1998). *DO-28: Cultural Resources Management Guidelines*. Washington, DC.
- NPS (1994). *Preservation Brief 36: Protecting Cultural Landscapes: Planning, Treatment and Management of Historic Landscapes*. By Charles A. Birnbaum.
- NPS (1992). *Secretary of the Interior's Standards for the Treatment of Historic Properties*.
- NPS (1990). *How to Apply the National Register Criteria for Evaluation*. National Register, History, and Education.
- NPS (1981). *National Register of Historic Places Inventory—Nomination Form for Federal Properties*. George Washington Memorial Parkway.
- NPS (1980). National Register of Historic Places – Registration Form. “Fort Hunt.” By Barry Mackintosh.
- NPS with Federal Highway Administration (FHWA) (2007). *Jones Point Park Environmental Assessment (EA)*.
- NPS, National Capital Region (NCR) (2007). Requirements for Special Events Held on Parkland. August 6, 2007. Retrieved on February 9, 2011 from <http://www.nps.gov/nama/planyourvisit/upload/Special%20Event%20Guidelines%20-%20Version%208-6-07-A.pdf>.
- Recreation.gov (no date). *Fort Hunt (VA), Fort Hunt Park, VA*. Retrieved on February 2, 2011 from <http://www.recreation.gov/campgroundDetails.do?contractCode=NRSO&parkId=70975>.
- Shellenhamer, Jason (2009). *Fort Hunt Geophysical Prospecting Survey, George Washington Memorial Parkway, Fairfax County, Virginia*. Contract No. C300050016, Work Order No. 13. Prepared for George Washington Memorial Parkway, National Park Service. The Louis Berger Group, Inc., Washington, D.C.

- Tetra Tech, Inc. (2007). *Final Environmental Impact Statement for Implementation of 2005 Base Realignment and Closure (BRAC) Recommendations and Related Army Actions at Fort Belvoir, Virginia*. Prepared for the U.S. Army Corps of Engineers, Mobile District. June 2007.
- United States Census Bureau (2000). *American Fact Finder*. Retrieved on December 29, 2010 from http://factfinder.census.gov/home/saff/main.html?_lang=en.
- USDA NRCS (no date a) *Farmland Protection Policy Act*. Retrieved February 4, 2011 from <http://www.nrcs.usda.gov/programs/fppa/>.
- USDA NRCS (no date b) *Hydric Soils – Introduction*. Retrieved February 4, 2011 from <http://soils.usda.gov/use/hydric/intro.html>.
- USDA NRCS (no date c) *Prime Farmland*. Retrieved February 4, 2011 from <http://www.va.nrcs.usda.gov/technical/Soils/primefarmland.html>.
- USDA NRCS. (no date d). Web Soil Survey data. Retrieved January 31, 2011, from <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.
- U.S. Fish and Wildlife Service (USFWS) (2011). National Wetland Inventory (NWI). Retrieved on January 21, 2011 from <http://www.fws.gov/wetlands/Data/Mapper.html>.
- USFWS (2010a). *Bald Eagle Fact Sheet*. Retrieved on February 3, 2011 from <http://www.fws.gov/midwest/eagle/recovery/biologue.html>.
- USFWS (2010b). *Laws that Protect Bald Eagles*. Retrieved on February 3, 2011 from <http://www.fws.gov/midwest/eagle/protect/index.html>.
- USFWS (2007). *National Bald Eagle Management Guidelines*. Retrieved on May 3, 2011 from <http://www.fws.gov/pacific/eagle/NationalBaldEagleManagementGuidelines.pdf>
- USFWS (2000). *Bald Eagle Protection Guidelines for Virginia*. Retrieved on May 3, 2011 from <http://www.dgif.state.va.us/wildlife/laws/baldeagleguidelines.pdf>
- USFWS (1990). *Chesapeake Bay Region Bald Eagle Revised Recovery Plan*. Retrieved on May 20, 2011 from http://ecos.fws.gov/docs/recovery_plan/0604191.pdf
- USFWS (1979). *Classification of Wetlands and Deepwater Habitats of the United States*. Authored by Lewis M. Cowardin et al.
- USGS (2008). *Lower 48 States Maps and Data*. Retrieved May 17, 2011 from <http://earthquake.usgs.gov/hazards/products/conterminous/>.
- Virginia Administrative Code (2009). Chapter 210: Virginia Water Protection Permit Program Regulation. Retrieved on January 28, 2011 from <http://www.deq.state.va.us/export/sites/default/wetlands/pdf/9VAC25-210-Final.pdf>
- Virginia Department of Conservation and Recreation (VDCCR) (2010). *Virginia Stormwater Management Program Permits*. Retrieved on January 28, 2011 from http://www.dcr.virginia.gov/soil_and_water/vsmp.shtml.

- VDCR (2004). *The Virginia Stormwater Act*. Retrieved on February 4, 2011 from http://www.dcr.virginia.gov/soil_and_water/documents/vaswmlaw.pdf.
- Virginia Department of Environmental Quality (VDEQ) (2010a). *Federal Consistency Information*. Retrieved on January 27, 2011 from <http://www.deq.state.va.us/eir/federal.html#enforce>.
- VDEQ (2010b). *Wetlands – Regulations, Permits, and Fees*. Retrieved on January 28, 2011 from <http://www.deq.state.va.us/wetlands/permitfees.html>.
- VDEQ (2010c). *What is the Virginia Coastal Zone Management Program*. Retrieved on January 27, 2011 from <http://www.deq.state.va.us/coastal/coastmap.html>.
- VDEQ (2006). *Final 2006 305(b)/303(d) Water Quality Assessment Integrated Report*. Retrieved on February 2, 2011 from <http://www.deq.state.va.us/wqa/ir2006.html>.
- Virta, Matthew R. (1991) *Archeological Test Excavations in Advance of the New Sewer Line Connection at Fort Hunt Park, George Washington Memorial Parkway* (management/memo report). National Park Service, Denver Service Center-Eastern Team, Eastern Applied Archeology Center.
- Woodrow Wilson Bridge (WWB) Project (2009a). *Description*. Retrieved on February 2, 2011 from <http://www.wilsonbridge.com/index.php/project-history/archives/project-overview/22-description>.
- WWB Project (2009b). *Potomac River Bridge (Woodrow Wilson Bridge)*. Retrieved on February 2, 2011 from <http://www.wilsonbridge.com/index.php/project-history/new-wwb-2000-present>.



As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.